YALE
MEDICAL LIBRARY



GENERAL MEDICAL
LIBRARY

PROCEEDINGS

OF THE

CONNECTICUT MEDICAL SOCIETY,

1899.

ONE HUNDRED AND SEVENTH

ANNUAL CONVENTION,

HELD AT

HARTFORD, MAY 24TH AND 25TH.

PUBLISHED BY THE SOCIETY.

H. P. STEARNS, M.D.
C. S. RODMAN, M.D.,
N. E. WORDIN, M.D.
Publication Committee.

1899.

The Connecticut Medical Society does not hold itself responsible for the opinions contained in any article, unless such opinions are endorsed by special vote.

All communications intended for the Connecticut Medical Society must be addressed to N. E. Wordin, M.D., Bridgeport, Conn.

The next Annual Meeting of the Connecticut Medical Society will be held in New Haven, May 23d and 24th, 1900.

THE FARMER PUBLISHING CO. PRINT,
BRIDGEPORT, CONN.

TABLE OF CONTENTS.

PAGE.

OFFICERS OF THE SOCIETY, 1899-1900, . . 5
STANDING COMMITTEES, ... 6
PROCEEDINGS OF THE ONE HUNDRED AND SEVENTH ANNUAL MEETING, 7-59
List of Fellows, *ex officio*, 7
List of Fellows elected by Counties, 1899, . . 8
Annual Address of the President to the Fellows, 9
Committees appointed by the President, . . 21
Report of Committee on Unfinished Business, . . 22
Report of Committee on Medical Examinations, 28
Rules for conducting Examinations, . 37
Report of Treasurer, ... 42
Report of the Committee to Consider the Recommendations in the President's Address, ... 44
Report of the Medicolegal Committee, 46
Proposed Amendments to the By-Laws, . 47
Committee to prepare Medical Directory, . 47
Report of Committee on County Resolves, . . 48
Resolution exempting dues of Members in the U. S. Service, . 48
Report of Committee to Nominate Essayists on the Progress of Medicine and Surgery, . 49
Report of Nominating Committee, . . 49
Election of Officers and Delegates, 50
Report of Auditing Committee, . . . , 51
Report of the Committee to Nominate Physician to the Retreat of the Insane, ... 51
Report of the Committee on Medical Legislation, . . 51
Report of Committee on testing the Eye-Sight of Children in the Public Schools, . . . , 55
An Act providing for the testing of the Eye-Sight of pupils in the Public Schools, . . 56
Report of the Publication Committee, . 56
Report of the Committee on Honorary Members and Degrees, . 58
Election of Honorary Members, . 59
Report of the Committee of Arrangements, . 59
THE ANNUAL CONVENTION: . . 60-73
Report of the Secretary, . 60
Report of the Delegates to the Vermont Medical Society, . 67
Report of the Delegates to the New York State Medical Association, 68
Papers read by Title, . 71
Resolutions concerning Consumption, . 73
Instructions to Committee on Legislation, 73
PRESIDENT'S ADDRESS :
Irresponsibility of the Insane, . . 77
DISSERTATION :
Insects as Etiological Factors in Disease, . 95
REPORT OF THE COMMITTEE ON MATTERS OF PROFESSIONAL INTEREST IN THE STATE:
The Spread and the Prevention of Tubercular Disease, . 115
MEDICAL PAPERS :
Report on the Progress of Medicine,
I. The Serum Treatment of Disease, by Dr. E. K. Root, Hartford, 133
II. General Progress, by Dr. O. T. Osborne, New Haven, . 139
Cerebrospinal Meningitis, by Dr. F. T. Simpson, Hartford, . 151
Decimation of the Race by Tubercle Bacilli, by Dr. E. P. Douglass, Groton, ... 159
Normal Breathing in the Treatment and Prevention of Tuberculosis, by Dr. G. J. Holmes, of New Britain, . . . 168

The Differential Diagnosis of Cardiovesicular Murmurs, by Dr. E. K. Root, Hartford, ... 178
The Treatment of Pertussis, by Dr. W. H. Donaldson, Fairfield, 186
Diseases of the Spanish-American War, by Dr. L. B. Almy, Norwich, ... 191
Some Points of Prophylaxis in the Volunteer Medical Service, by Dr. J. M. McCook, Hartford, . . . 198
Milk, I. Its Production and Care, by Dr. Samuel Pierson, Stamford,
II. Its Consumption, by Dr. F. C. Graves, Bridgeport, 216
Reminiscences of Medical Men, by Dr. M. C. Hazen, Haddam, 229

SURGICAL PAPERS :

Report on the Progress of Surgery, by Dr. M. M. Johnson, Hartford, 239
Our Legal Responsibility in the Treatment of Fractures, by Dr. A. G. Cook, Hartford, . . . 259
Lymphoid Hypertrophies of the Pharyngeal Vault, by Dr. C. E. Munger, Waterbury, . . . 273
The Treatment of Suppurating Wounds, by Dr. E. J. McKnight, Hartford, ... 279
Three Cases of Femoral Hernia, by Dr. E. P. Swasey, New Britain, 288
History of the First Twenty-three Cases of Gastrostomy by Dr. M. M. Johnson, Hartford, . . 297
A Case of Renal Calculi with Operations, by Dr. M. Storrs, Hartford, ... 313
A Case of Fracture of the Cervical Vertebrae with Recovery, by Dr. J. E. Root, Hartford, ... 316
Report of a Case of Injury to the Spinal Cord; Diagnosis and Autopsy, by Drs. Case and North, . . 319
A Case of Appendicitis with Pathological Specimen, by Dr. J. H. Rose, Hartford, ... 324

MEDICOLEGAL PAPERS :

Insanity in its Medicolegal Relations, by Dr. Gustavus Eliot, New Haven, ... 329

OBITUARIES :

Dr. William T. Lusk, of New York, by Dr. A. D. Smith, New York, 343
Dr. Roswell Fox, of Wethersfield, by Dr. E. J. Fox, of Wethersfield, 350
Dr. Farnham O. Bennett, of Willimantic, by Dr T. M. Hills, of Willimantic, ... 352
Dr. Frederick L. Dibble, of New Haven, by Dr. J. E. Stetson, of New Haven, ... 354
Dr. Oliver F. Treadwell, of New Haven, by Dr. H. H. Smith, of Whitneyville, ... 357
Dr. Winthrop B. Hallock, of Cromwell, by Dr. F. D. Edgerton, of Middletown, ... 359
Dr. William G. Brownson, of Noroton, by Dr. A. E. Barber, of Bethel, ... 362
Dr. M. N. Chamberlain, of Cheshire, by Dr. E. T. Cornwall, of Cheshire, ... 365
Dr. Henry Doutteil, of New Britain, by Dr. George Cleary, of New Britain, . . . 368
Dr. Leonard J. Sanford, of New Haven, . 371
Dr. Daniel C. Leavenworth, of New Haven, 374
Dr. Panet M. Hastings, of Hartford, by Dr. M. Storrs, Hartford, 375

LIST OF HONORARY MEMBERS, . . 379
LIST OF ACTIVE MEMBERS, ARRANGED BY COUNTIES, . 380
LIST OF ACTIVE MEMBERS, IN ALPHABETICAL ORDER, . . 393
APPENDIX A. Regulations for International Medical Congress, 407
APPENDIX B. Amendments made to By-Laws, 412
APPENDIX C. Toasts Responded to at Banquet, . 413
LETTER FROM SIR JAMES A. GRANT, ... 414
RESOLUTIONS OF MIDDLESEX COUNTY MEDICAL ASSOCIATION, . 415

OFFICERS OF THE SOCIETY.

1899–1900.

PRESIDENT.

CHARLES S. RODMAN, Waterbury.

VICE PRESIDENT.

LEONARD B. ALMY, Norwich.

VICE PRESIDENTS, ex officio.

JOSEPH A. COOGAN,
OLIVER T. OSBORNE,
WILLIAM WITTER,
WATSON E. RICE,
OMAR LA RUE,
EDWARD H. WELCH,
ARTHUR J. CAMPBELL,
WILLIAM C. HAVEN.

TREASURER.

W. W. KNIGHT.

SECRETARY.

N. E. WORDIN.

ASSISTANT SECRETARY.

JULIAN LAPIERRE.

COMMITTEE ON MATTERS OF PROFESSIONAL INTEREST IN THE STATE.

L. W. BACON, JR., J. G. STANTON,
FREDERICK T. SIMPSON.

STANDING COMMITTEES.

Committee to Nominate Physicians to the Retreat for the Insane.

JOHN B. KENT, M.D., FRANCIS D. EDGERTON, M.D.,
H. S. FULLER, M.D., ERASTUS P. SWASEY, M.D.,
ELBRIDGE K. LEONARD, M.D.

Committee on Legislation.

M. STORRS, M.D., F. BACON, M.D.,
L. S. PADDOCK, M. D., E. F. PARSONS, M.D
N. E. WORDIN, M.D.
O. J. D. HUGHES, M.D., New Haven County.
E. J. MoKNIGHT,M. D., Hartford County.
F. N. BRAMAN, M.D., New London County.
J. W. WRIGHT, M.D., Fairfield County.
J. B. KENT, M.D., Windham County.
R. S. GOODWIN, M.D., Litchfield County.
FRANK K. HALLOCK,M.D.,Middlesex County.
C. B. NEWTON, M.D., Tolland County.

On Medical Examination.

CHAS. B. GRAVES, M.D., MAX MAILHOUSE, M.D.,
HORACE S. FULLER, M.D., JOHN W. WRIGHT, M.D.,
J. FRANCIS CALEF, M.D.

On Honorary Members and Degrees.

S. B. ST. JOHN,M. D., JOHN L. GRANNISS, M. D.,
GEORGE L PORTER, M.D.

Committee on Publication.

HENRY P. STEARNS, M.D., ex officio.
CHARLES S. RODMAN, M.D., ex officio.
N. E. WORDIN, M.D., ex officio.

Committee of Arrangements.

R. A. McDONNELL, M.D., Anniversary Chairman.
JAY W. SEAVER, M.D.,
S. D. GILBERT, M.D.,
C. P. LINDSLEY,
F. H. WHEELER, M.D.

PROCEEDINGS

OF THE

CONNECTICUT MEDICAL SOCIETY,

ONE HUNDRED AND SEVENTH ANNUAL MEETING.

The President and Fellows of the Connecticut Medical Society met in the Hunt Memorial Building, Hartford, on Wednesday, May, 24, 1899. The President, Dr. Stearns, caled the meeting to order. The Committee on Credentials made its report by calling the roll of regularly appointed delegates.

FELLOWS, ex officio.

President.

HENRY P. STEARNS.

Vice-President.

CHARLES S. RODMAN.

Vice Presidents, ex officio.

*JOSEPH A. COOGAN,
OLIVER T. OSBORNE,
*WILLIAM WITTER,
WATSON E. RICE,
*OMAR LA RUE,
EDWARD H. WELCH,
*ARTHUR J. CAMPBELL,
WILLIAM C. HAVEN.

Treasurer.

WILLIAM W. KNIGHT.

Secretary.

N. E. WORDIN.

Committee on Matters of Professional Interest in the State.

F. T. SIMPSON, *S. B. OVERLOOK,
*R. A. MCDONNELL,

*Absent.

FELLOWS BY COUNTIES, ELECTED IN 1899.

Hartford County.

James Campbell, Jay S. Stone.
H. G. Howe, *Newton S. Bell,
G. R. Shepherd.

New Haven County.

W. H. Carmalt, Henry Fleischner,
*W. P. Wilson, F. W. Wheeler,
A. A. Crane.

New London County.

W. K. Tingley, †Patrick Cassidy,
*W. T. Brown, *M. E. Fox,
F. N. Braman.

Fairfield County.

A. E. Barber, Loren T. Day,
*W W. Gray, F. M. Tukey,
°S. M. Garlick.

Windham County.

T. M. Hills, Clarence Simonds,
*H. R. Lowe, *Rienzi Robinson,
E. H. Tanner.

Litchfield County.

J. C. Kendall, J. S. Bissell,
A. J. Barker, *W. M. S. Curtis,
Frank H. Lee.

Middlesex County.

*E. P. Nichols, ||W. W. Plumstead,
Miner C. Hazen, *J. H. Granniss,
F. S. Cowles.

Tolland County.

A. R. Goodrich, Frederick L. Smith,
* C. F. Sumner.

*Absent. †In place of C. B. Graves. °In place of F. J. Adams.
||In place of F. S. Smith.

The President then read his

ADDRESS TO THE FELLOWS.

FELLOWS OF THE CONNECTICUT MEDICAL SOCIETY,

Gentlemen :—

It is with satisfaction and pleasure to me that it has become my duty on this occasion to welcome you to Hartford for our one hundred and seventh yearly meeting. And no small part of this satisfaction arises from the fact that I can for the first time also welcome you to the hospitalities of the Hunt Memorial Building, which I trust will *in secula seculorum* keep alive the remembrance we have of him who during a long professional life was one of the most loyal and devoted members of this Society. He was elected a Fellow several times and was President two years. There was nothing crooked or Pecksniffian in his organization. On the contrary, the elements of his character were arranged in straightforward order.

> "Formed on the good old plan,
> A true and brave and downright honest man:
> He blew no trumpet in the market-place,
> Nor in the church, with hypocritic face
> Supplied with cant the lack of Christian grace;
> Loathing pretence, he did with cheerful will
> What others talked of, while their hands were still."

He was a man so sincere and excellent that I have always considered it as one of the good fortunes of my life that I could count him my friend.

This building as a Memorial of him was made possible to the Hartford Medical Society through the gracious and affectionate remembrance of Mrs. Hunt.

In the name of the Hartford Medical Society, gentlemen, I bid you each and every one a most cordial welcome to-day.

It seems but yesterday since we met last year, so

swiftly do the days of our years pass in the midst of the numberless duties which come to us in life. And yet who would have it otherwise? We enjoy life most when time passes quickly and we are fully occupied. Besides every new year brings to the lover of Medicine a prospect which is brighter in some respects than the preceding one. The fields of Medicine and Surgery become longer and broader; the vision of their possibilities becomes clearer, while new avenues are opening before us for those who are qualified and ready to move forward into them.

Nor have we as a society been altogether indifferent or insensible to the message which has called us to move forward and occupy these fields which have been waiting cultivation so long a time. I have been especially impressed with this fact by a comparison of the program, or rather the record, of the exercises at the meeting of this society in the year 1860, when I became a member of it, with that of the meeting last year. Permit me to refer to the record of that meeting for a moment.

In 1860 there were only three hundred and twenty members of our society and seventy of those were seventy or more years of age. Our present number is six hundred and sixty.

Few of the members at that time were accustomed to attend the yearly meetings, except the Fellows, and they were paid for their service in case they made the sacrifice. The meeting of that year was held at Hartford and occupied a part of two days; and aside from the conduct of the routine business, such as the appointment of the standing and nominating committees and their reports, and the election of officers,—the exercises consisted in the President's address, a dissertation on the general subject of Hygiene, and a Sanitary Report, followed by the usual biographic notices of deceased members. Two papers only strictly pertained to practical Medicine, with

none on Surgery. And as indicating how professionally apathetic the members of Hartford County were in reference to the exercises of that year, which I think was not an exceptional one, (I trust we have since atoned to some extent for our indifference and brought forth works meet for repentance), I quote a paragraph of a rather pathetic character from the record of the Sanitary Report referred to above.

The reporter says:—"Circulars were sent out as usual to physicians. In these circulars attention was directed particularly to Tubercular Phthisis, special points of interest being indicated. The committee hoped, by thus limiting and defining the field of inquiry, to obtain more precise and important information than they would obtain should they open the whole subject of medical investigation. The history of any cases of interest, or of any epidemic, was also solicited.

"But," he continues, "the whole county has been as silent as the grave. Indeed we have been left to question the dead. For the 'muffled drum' and the 'funeral note' in the 'dead march' have alone responded to our inquiries." He then passes on to the examination of mortuary statistics.

No wonder that there were some present at that meeting who thought the time had arrived to cease furnishing music of the "dead march" and "muffled drum" order. As an evidence of the feeling the following Resolution which has a sort of John the Baptist ring to it, was adopted, and the convention then adjourned.

"Resolved, That the Convention, recognizing the necessity of adopting some measure, more fully to carry out the original designs of the founders of this Society in the advancement and diffusion of medical knowledge and the promotion of kind feeling among its members, and thinking to add to the interest and value of its meetings, do appoint a Committee of one from each County,

to inquire into the propriety of re-organizing on a more voluntary basis, and report at the next annual meeting."

This was the beginning of the dawn of a better day for our Society, and though there did not result any very large increase in the number of papers for some years, and the voice of the resolution was like that of one crying in the wilderness for a long time, yet at nearly every meeting the subject was agitated, and the agitation finally bore fruit, so that at present we have a yearly program which compares favorably with those of other State Societies whose membership is about the same as that of our own. We have a considerable number of faithful and competent workers in our Society who are occupying the different fields of Medicine and Surgery, while our yearly meetings bear evidence that they are ready not only to attend the annual conventions in larger numbers, but are also ready to coöperate in making these meetings of interest and value to the cause of Medicine, and thereby to the public.

They have also shown a keen appreciation of the importance of a close alliance of our former resources in Medicine with those of chemistry, biology, bacteriology, and microscopy, so that by means of these forms of science and observation, we may be better furnished with the means of ascertaining the causes and discovering remedies of disease.

This has been apparent more especially by the sympathy we have shown with the efforts made by the Faculties of some of the Medical Colleges of the country, to realize a higher standard of preparatory and medical education. And I am confident that I voice the sentiment of our Society when I say that we would have the requirements for graduation in the Medical Department of Yale University second to those of no other in the country.

We have also shown our sympathy with and appreciа-

tion of the efforts of our profession in exposing quackery and humbug in whatever form it may appear in Medicine. Recognizing the truth that, other things being equal, the highest service is rendered to the State by those of her citizens who are in vigorous health, and also the fact that the largest measures of good come to those who possess this priceless blessing, we have united our efforts with those of our brethren in safeguarding the public by securing as its physicians only those who have proved that they have become well grounded in the principles of Medicine, and are qualified to have the care of those needing their service.

The members of our Society have also given evidence that they have been in cordial sympathy with the forward movement in the progress of Sanitation, the prevention of disease, and a diffusion of intelligence concerning the laws of health throughout the State; and also that they are alive to the importance of securing the requisite legislation in the furtherance of these and other public benefits.

I need not, however, refer on this occasion, to other not less important evidences of our interest in the advances of our professional work. I have said thus much simply to indicate that we have not been altogether idle during the recent past, but on the contrary have some cause for congratulation.

But, Gentlemen, I beg to remind you that we have not yet reached the period of the Millennium in either Medicine or Surgery. There is abundance of room for improvement and advance in almost every department, and the harvest is already ripe for the reaper.

My predecessor in his excellent address last year reminded us that Bacteriology "has taken Pathology down from its high throne where it had been worshiped from afar, and transformed it into a practical everyday working force in Medicine." Observe the carefulness of this

statement. Only the door has been opened, and we can now enter and investigate. The bacillus is indeed a marvelous discovery, and one far-reaching in its results. But it is necessary to study him in all the different forms in which he may appear, the environments congenial to him, his relations to us and ours to him, if we are to profit by his discovery. The field is ready; improved methods of research are every year being formed, and we anticipate that the secret of disease will ere long be unveiled. Health, physical and mental, is essential to civilization and the happiness of society, and the time is never likely to come when it will be prized less than it now is.

Honor and emolument, therefore, await him who in any way may improve the science of Surgery or Medicine, or discover the means of preventing disease and prolonging life. It is true that there are few great discoverers in our profession, and long intervals passed from Hippocrates to Harvey and from Pinel to Wells, yet there are assurance and encouragement in knowing that almost all forms of science progress not by means of perfected discoveries, but rather by small improvements in the things and methods already in use. Almost every earnest student (and who of us is not a student?) may contribute his mite to the sum total of our possessions, and thereby hasten the advent of a greater service which we may be able to render to humanity.

My attention has been called to a discrepancy existing in our By-Laws which should be remedied. The Charter, Section 3, says that the President and Fellows of the Connecticut Medical Society shall be composed of the Officers of the Society for the time being and all Fellows, etc., etc.

In the By-Laws, Chapter II, Section 1, the different officers are named, and among them Assistant Secretary. This office did not exist until 1892. In Chapter III, Sec-

tion 2, the President and Fellows of the Connecticut Medical Society, as a term, is defined, but the Assistant Secretary is left out. That this lack of harmony in the different portions of the By-Laws may be obviated, this office should appear in both chapters and sections alike.

I also call your attention to the following important amendments of the By-Laws, which were presented at our meeting last year: Chapter VI, Section 2. Amend by inserting the words "to be elected," (third line, p. 394, Proceedings of 1898) the words: "This shall consist of one or more names for President, and two or more names, each from different counties for each of the other offices."

Chapter V, Section 3. Amend by inserting after the words "nostrum or patent medicine" (fourth line, p. 394,) the words, "or who shall be employed under contract to do the medical work of any individual, firm, society, or corporation, who publicly advertises, vends or sells any nostrum, appliance, patent medicine, or secret treatment."

I commend these amendments of the By-Laws to your careful consideration, and such action as may secure the object sought to be accomplished.

While fully recognizing the importance of not appearing before the Legislature too frequently in the interest of securing the passage of enactments which may be regarded as important to the interest of medicine or of the public, yet I feel impelled to call your attention to a recommendation of my predecessor. This suggests that the Committee on Legislation should secure if possible the passage of an "amendment to the Medical Practice Act which shall revoke without possible recovery, the license of any physician who shall have been convicted before a proper tribunal of crime in the course of his professional acts." I believe that a suitable regard for

our own self-respect and for our professional standing in the community, should lead us to continue efforts, at the proper time, to secure the passage of such an amendment.

I further beg leave to ask your consideration as to the importance of another suggestion. This relates to efforts regarding a National Confederation of Examining Boards for the purpose of unifying the examinations of the Boards of the several States of the country, so that in the future a license issued by the Examining Board of any one State will confer the right to practice in any other State.

Now while such a scheme, if it could be arranged, would have many advantages, yet I question the practicability of perfecting it. The standard of medical education, as that of other professions, must necessarily depend to a considerable extent upon the organization and equipment to be had in the colleges of the different States. These will differ very widely for many years to come in the different sections of the country. I, however, am inclined to regard some such plan as feasible for some of the New England States and New York, and I fully endorse that paragraph of the report which reads as follows:

*"With that object in view, and as the first step in that direction, we would suggest that further legislation be carried to the extent of placing our law on an equality with that of the State of New York, and so secure recognition of our licenses by the Regents of the University of that Commonwealth." I commend this proposition to your consideration for action at such time as may seem to be propitious. While our State is small in territory, we do not admit that it is in any other way, and our Society is one of the oldest ones in the country. We therefore aspire to rank in the requirements of professional qualifications with the highest.

*Proceedings, 1898, p. 47.

I also call attention to the amendment of the By-Laws suggested last year relating to the Business Committee, as follows:

"Chapter III, Section 5. The Business Committee shall consist of the President, the Vice President and the Secretary, ex officio. Besides receiving the dissertations and other papers and reports of cases, which in course are referred to them to be read at the meetings of the Society, this committee shall procure by personal solicitation papers from persons qualified to discuss matters of fundamental importance and of current interest, and shall seek in every way to furnish an attractive and profitable program of literary exercises for the Annual Convention. The papers thus secured shall have the place of honor on the program above those referred in course."

I think that the tendency of such an amendment is in the right direction, and I may add that its provisional arrangement has been followed by the Business Committee during the past year.

Chapter III, Section 4, of the By-Laws provides for a Committee of Publication which shall consist of the Secretary, exofficio, and two other members elected by ballot, one of whom shall be theAssistant Secretary.

As such an arrangement is not found to work in altogether a satisfactory way, and is attended with some inconvenience to its members and delay in publishing the Proceedings, I suggest that this method of providing such a Committee be abolished, and that the Committee on Publication shall consist of the Business Committee, as this is provided for in the above mentioned amendment proposed last year, p. 25, of Proceedings; and that the term of their service as such shall commence on the first day of July next following the election of its members as officers of the Society. Such a change would greatly facilitate the publication of the Proceedings, by

enabling the Committee to place a considerable portion of them in the hands of the printers prior to the time of holding our yearly meeting.

A resolution was presented for consideration at our meeting last year to the effect that the Committee on Legislation should "consider the advisability of and secure legislation for prohibition of public exhibitions of hypnotism." How frequent such exhibitions have been in the State I am unable to say, but the purpose of the resolution is excellent. The consciousness of one while under the influence of hypnotism is as fully abolished as while under the influence of ether or chloroform; and the loss of memory of what may occur while in that state is as great. No one would think of such exhibitions with chloroform or ether, and yet the helplessness of the subject becomes even greater while in the hypnotic state, because he or she is subject to the power of suggestions, of whatever nature they may be, by the operator. Such exhibitions are absolutely void of any good purpose, and in the process of time produce an injurious effect upon the subject. I therefore commend the object of the resolution.

I have recently received a communication from Dr. Frederick H. Wiggin in reference to publishing a Medical Directory of New York, Connecticut and New Jersey. As I understand, this directory, so far as it relates to New York, is already in preparation, and the committee having the work in charge are desirous of having it include Connecticut and New Jersey, and also to have the official endorsement of the book by our Society. It is in contemplation to have the book contain not only lists of the regular physicians of the three States, but also those of the dentists and pharmacists, and also the Constitution and By-Laws of the American Medical Association, the New York State Medical Association, the Connecticut Medical Society, and the New Jersey Medical Society,

besides much other information which may be of interest and in some cases of value to the physicians of the three States..

I heartily commend this project to you for favorable action, and if it meets your approval would suggest the appointment of an advisory committee, who shall confer at such time as may be necessary with the committee of the New York State Association in reference to the compilation of the work.

Dr. Pierre Le Burton Stickney.

It appears to have become a custom in recent years for the President to refer to the death of any of our Honorary Members who have passed away during the previous year. I find that no mention has been made of the death of Dr. Pierre Le Burton Stickney, who died in 1887 at the age of seventy-three years. He was a delegate to our annual meeting in 1875 from the Massachusetts Medical Society, and his membership in this Society dates from that year. I regret that I am unable to present any further information in reference to Dr. Stickney, but I have found it impossible to obtain any from the Secretary of the Massachusetts Medical Society, or from any other source. So quickly do those who pass over to the great majority also pass out of the memory of those who remain.

William Thompson Lusk, M.D., LL. D.

I am indebted for the following facts and data concerning our very distinguished Honorary Member, Dr. William Thompson Lusk, whose death occurred in 1897, to a memorial address on him by Dr. A. Alexander Smith, kindly sent me by his son, Professor Graham Lusk.

It is not too much to say of him that few, very few, of the members of our profession have attained so many honors at home and abroad as Dr. Lusk was the recipient

of. It would be quite out of place, if it were possible, for me to even mention in detail all of his many works as a physician and scientist. I can only refer to a few of the events of his life, leaving to his biographer to furnish at greater length some appropriate statement.

He entered the Freshman Class of Yale College in 1855, and left at the expiration of one year on account of some difficulty with his eyes. But in 1872, through the action of the Corporation, he was again enrolled with his class and received the degree of A.M., and in 1894 the College conferred on him the honorary degree of L. L. D.

When the war was declared in 1861 he was offered a position on the staff of Governor Buckingham which he declined, but afterward enlisted as a private in a New York regiment in June, 1861. He was present at the first battle of Bull Run, and remained in the military service, having been promoted for distingnished bravery in many engagements, until September, 1863. During his military service he was never wounded, though on one occasion he had his belt shot off, and on other occasions had two horses shot under him.

These few statements may serve to indicate something of the spirit of the man while young, but it was in his after life and in the maturity of his professional experiences that he won his highest honors.

In 1869 he was elected to the Professorship of Physiology and Microscopic Anatomy in the Long Island College Hospital. In 1871 he was offered the Chair of Obstretics and Diseases of Women and Children at the Bellevue Hospital Medical College which he accepted, and held the position until his death. During some years he was co-editor with Dr. James B. Hunter of the New York Medical Journal. From 1889 to 1897 he was President of the Bellevue Hospital Medical College.

His eminence as an investigator and writer led to his Honorary Fellowship in the Edinburgh and London Ob-

stetrical Societies, and his selection as a corresponding Fellow of similar Societies in Paris and Leipsic, and also of the Paris Academy of Medicine.

The crowning work of his life without doubt will be regarded as his book on "The Science and Art of Midwifery." This work has been translated into several European languages, and also into Arabic, and occupied in its editions his professional pen until the last.

Dr. Lusk was a native of this State, born in Norwich in May, 1838. We cannot regard his service to our Profession and to humanity too highly.

I now declare the one hundred and seventh annual meeting of the President and Fellows of the Connecticut Medical Society open, and invite you to proceed to the transaction of such business as may come before you.

The regular committees were then announced as follows:

On Credentials.

N. E. Wordin, Jay S. Stone.

On Unfinished Business.

O. T. Osborne, F. N. Braman,
Rienzi Robinson.

County Resolves.

H. G. Howe, L. T. Day,
J. H. Granniss.

To Nominate Essayists on the Progress of Medicine and Surgery.

W. E. Rice, Henry Fleischner,
C. B. Graves.

On Business.

H. P. Stearns, C. S. Rodman,
N. E. Wordin.

Auditing.

W. C. Haven, E. H. Welch.

Reception of Delegates and Invited Guests.

M. Storrs, G. C. Segur,

E. K. Root.

Thereupon an adjournment was made until 1:45 P. M.

THE AFTERNOON SESSION

was called to order at 2 o'clock, and immediately proceeded to the order of business as announced upon the program.

The Report of the Committee on Unfinished Business was first called for. It was rendered by Dr. Osborne. The first amendment proposed is to Chap. III, Sec. 5, of the By-Laws, on page twenty-five of the Proceedings. The amendment offered is to substitute for the section as it now stands the following: The Business Committee shall consist of the President, the Vice President and the Secretary, ex officio. Besides receiving the dissertations and other papers and reports of cases which in course are referred to them to be read at the meetings of the Society, this committee shall procure by personal solicitation papers from persons qualified to discuss professional matters of fundamental importance and current interest, and shall seek in every way to furnish an attractive and profitable program of literary exercises for the Annual Convention. The papers thus secured shall have the place of honor on the program above those referred in course.

The committee recommended the adoption of the amendment with the further addition that the Business Committee shall hold office for one year from the first day of July next following the election of its members as officers of this Society, and shall perform all duties that heretofore have devolved upon the Committee on Publication.

All provision of the By-Laws inconsistent herewith are hereby repealed, viz.: the references to the Committee on

Publication contained in Chap. II, Sec. 5, and Chap. III, Sec. 4.

The committee recommended the adoption of this amendment and it was adopted.

The next amendment proposed was to Chap. IV, Sec. 3, page twenty-six of the Proceedings. After the words, *" County six months," to be appended, " Distinguished non-resident members of the medical profession who own summer residences in Connecticut and spend a part of the year there, may be in the same manner received as members in the Association of the county with which they are thus identified."

The committee does not approve of this amendmeut because the By-Law as it now stands covers the membership for all persons now practicing in Connecticut. Others can be made Honorary Members. The entire committe have not expressed themselves on the subject, but the chairman does not approve of it. One member of the committee does.

Dr. Kendall as the mover of the motion one year ago wished to explain. The decision of membership rests with the County Association. He is willing to trust any county society. This question came before the State Society three years ago, names were presented such as are comprised within the meaning of this amendment and they were ratified by action of the Society.

President Robinson recommended it in his address and the Society also indorsed his suggestion. Last year again the President, Dr. Goodwin, favored it, and the committee to consider his recommendations strongly approved. It has now lain over for a year. We have tried it in Litchfield County and it works well. The men whom it is proposed to elect are not transients. They have a home within the State. They come into touch with the doctors of the County. We are pleased to have them with us. We have tried it for a number of years in

Litchfield County and we want to indorse it most heartily. These men are prominent medical men in New York, medical teachers. They will sit down with ten Litchfield County doctors and spend the day with us. We get good from it. Other counties have the same kind of men and five counties have indorsed this proposition. One of those men brought up from New York, at his own expense, two cases of Gastrostomy to exhibit to us.

You may have no interest in this matter personally but other counties feel the need of such help as such men give. You here pass laws for all the Associations of the State. Such help is much to us. These men bring to us the active and hospital practice of years.

Dr. Carmalt—In what way does the present By-Law fail? He doesn't see that it fails. If a man has lived in the County six months he can be elected, under the present laws.

Dr. Kendall—The By-Law says living in the State one year and in the County six months. But this is for men who are not residents, they are only summer stayers. We want them for the good they will do us.

Dr. Osborne—We should not limit it to men who own houses. These men might hire houses and live in the State. We can honor them by an election to Honorary Membership.

Dr. E. H. Welch—They have all the honor they need. The opinion of Fairfield County was called for. Dr. Garlick responded and said that his County had not been canvassed nor its opinion asked. In Fairfield County we receive pleasure and aid from those who practice in New York and have residence within our boundary. It is mostly in consultation that we meet them. We bring them frequently into our annual and semi-annual meetings, but we do not know that they would take any more interest if they were active.

Dr. Kendall—We are brought into close relation with

these men. They have nothing to do with practice in this State.

Dr. ——There is a lack of safeguard around this amendment. Dr. Kendall, in advocating the proposition, says that he is willing to trust the counties. But the counties are not allowed that. There is a property qualification here. A man must own his house. He must be a man of wealth. Suppose he should own his house and sell it and continue in practice. Would he lose his membership by selling his house? Residence is the test of qualification to practice.

Dr. Tingley—What is gained by not making these men Honorary Members? Wouldn't they try to get just as many patients to go to New York?

Dr. Kendall—We don't honor them, they honor us.

The question being put, the amendment was lost.

The committee further reported a proposed amendment to Chap V, Sec. 3, page twenty-two of the Proceedings, to insert after the words "nostrum or patent medicine" the words, "Or who shall be employed or under contract to do the medical work of any individual, firm, society or corporation who publicly advertises, vends or sells any nostrum, appliance, patent medicine or secret treatment."

The committee reported unfavorably upon this because they think the By-Law as it is covers the point intended. If, however, the words "or secret treatment" should be added after the words "patent medicine" it will cover the Keeley cure at which the amendment was evidently aimed. This was adopted.

A fourth amendment was to Chap. VI, Sec. 2, by inserting after the words "to be elected," the words "this shall consist of one or more names for President and two or more names, each from different counties, for each of the other offices." Proceedings, p. 22. A further change in the methods of the

Nominating Committee was proposed last year by Dr. F. W. Wright and is found on page 378 of the Proceedings. It is "the Nominating Committee shall meet at least two weeks before the meeting of the State Society, and make the nominations which shall be submitted to the members of the Society at least one week before the annual meeting."

The committee does not approve of the first changes. The presentation of names beforehand is in line with other deliberative bodies and gives more time for consideration. In looking over the list of living ex-Presidents and comparing it with the number of members in the corresponding counties we find the representation quite disproportionate.

Living Presidents.		Members.	Proportion.
Hartford	4	142	1:35
New Haven	2	189	1:94
New London	1	50	1:50
Fairfield	2	122	1:61
Windham	3	35	1:11
Litchfield	2	49	1:24
Middlesex	1	40	1:40
Tolland	3	18	1:6

The committee approves of this latter proposed change suggested by Dr. Wright.

Dr. Kendall—Will members of the Nominating Committee come together? If not, it is better to have the election done as it is now.

Dr. Wright—Let the counties select men who will be there. The men will know, when chosen, what will be expected of them.

Dr. A. E. Barber—It is almost impossible to get men together. It has been difficult to get them together for the nominations to-day.

Dr. Swasey—Let alternates be appointed. It ought to be possible to get one out of two.

Dr. Hills—There is one objection. The object in having a Nominating Committee is to prevent confusion. Two candidates would tend to make confusion. This change would carry us back to the time before the existence of any such committee.

Dr. Garlick—Why should there be only one nominee for President and two for the other officers?

Dr. Osborne—To do away with the custom of shifting the Vice President to be President, which has come to be like an unwritten law.

Dr. Cassidy—Wherein does the present system fail? If it has not worked well he would be glad to hear of it and called for testimony on the subject.

Dr. Osborne—This plan would give more time for decision and prevent any hasty action. The members of the committee to-day have not had time to get their lunch.

Dr. Cassidy—The plan we have has worked well. Two or three candidates for each office would make discussion and trouble. The men on the Nominating Committee never complain. This plan is like going into a ward caucus. Let us keep the Connecticut Medical Society out of politics.

Dr. Carmalt—We can get together and nominate men without opposition. The point in favor of the change is the want of fair representation of counties which have a large membership. For instance Tolland has one President to six members; New Haven one to ninety-four. It is not an equitable distribution of honor, and while the Presidents of the smaller counties are all worthy men, the different Associations do not have an equal representation according to number.

The proposed amendments were lost.

Dr. Mailhouse, Secretary of the Committee on Medical Examinations, asked that he might present his Report at

this time as he would be obliged to leave the city at 3:30. Permission was granted and his report was read.

Report of the Committee on Medical Examinations.

To the President, Fellows and Members of the Connecticut Medical Society.

Your Committee on Medical Examinations having completed its work for the past twelve months presents herewith its sixth annual report. Within this period five sessions have been held, all in New Haven, two in the rooms of the New Haven Medical Association and the others in the Common Council Chamber, City Hall.

This year has become memorable in our annals in that two members of our Committee were appointed to important duties as Medical Officers in the Army during the war with Spain. These members, Drs. L. B. Almy and J. W. Wright, are again with us, conscious of duty faithfully performed, and once more in harness in the service of the State as members of the Committee.

It is a cause for congratulation that but a very small percentage of applicants now appear as non-graduates; and the committee feels that its work in the past has been no small factor in pointing out to applicants, that a man with no diploma is treading on dangerous ground by taking an examination for which he has not been properly prepared. During the past year we have examined fifty-two applicants, of whom thirty-five or 67.3% passed, eleven or 21% were rejected, and six or 11.7% were conditioned. Of those who were passed, two, who had no degrees, were examined in March and expect to graduate in June. One of those rejected was not a graduate. In addition to these statistics it should be stated, that of those passed seven had previously been rejected, and six had been conditioned in one or two branches. The six now reported as conditioned have not yet made their conditions good and hence have not received certificates.

In addition to the above, five were examined for license to practice Midwifery, of whom two passed and three were rejected. Among those examined for general practice five were women of whom two passed and three were rejected, those who passed, both graduates of the Woman's Medical College of the New York Infirmary. It is worthy of note that the number examined is considerably in excess of that of any one previous year. A not inconsiderable number of these, though passing the examinations are nevertheless not as well grounded in the principles and practice of medicine as they should be in consideration of the advantages which obtain at the present time in the Medical Colleges of the country. Nor is this the fault of the student alone. Colleges and individual professors are, at times, cognizant of the inefficiency of their graduates. It seems that in some colleges, lecturers are in the habit of giving undue prominence to such facts as for example, that Hysterectomy or Laparotomy have been done for Puerperal Septicemia in rare cases. The students go off with the idea that it is the proper thing to do occasionally and instead of being made more familiar with ordinary conditions, go out with minds filled with the brilliant achievements of medicine, but bare of the practical and substantial material of which a medical education should consist.

They seem to absorb at college the modern scientific or theoretical advances but fail where common sense and sound learning are wanted. The following is a sample from an M. D. with a diploma granted in 1898, (shall we call him an end-of-the-century-doctor ?)

"In a transverse presentation the great fontanel would be felt with its longest diagonal transversely and shortest antero-posteriorly. It would be more easily felt than it would in any other position. The Posterior Fontanel would be felt to one side of it and the brow to the other." "A transverse presentation can be deter-

mined by the unusual shape of the abdomen and uterus. Upon palpating through abdomen a flat unyielding surface can be determined anterior, while posteriorly can be determined the more yielding surface of the abdomen."

The "Doctor" has certificates for excellence in three different specialties; needless to state he cannot practice any of them in this State.

We desire to call the attention of the members of the Society to the points wherein we are behind our neighbors in the matter of requirements preliminary to examinations. It is required in New Jersey that "Midwives must have studied midwifery for at least six months, and must be gradnates of a legally incorporated school of midwifery, before they can be admitted to the examinations" of the State Board. Also in New Jersey, "candidates for general practice must be graduates from an accredited literary or scientific college, or have completed satisfactorily not less than a three years' course in an accredited school or academy, or have received a preparatory education covering the following branches, viz.: Orthography, arithmetic, English grammar and composition, geography, history of the United States, algebra and physics, or what this Board may consider their equivalent." Before a license to practice medicine in that State can be procured, the medical law requires four years of medical study, including three courses of lectures in different years, in a legally incorporated Medical College, prior to the granting of a degree and an examination by the Board in the following subjects: (1) Materia Medica and Therapeutics. (2) Obstetrics and Gynecology. (3) Practice of Medicine, including diseases of the skin, nose and throat. (4) Surgery, including surgical anatomy and diseases of the eye, ear and genito-urinary organs. (5) Anatomy. (6) Physiology. (7) Chemistry. (8) Histology, Pathology and Bacteriology. (9) Hygiene and Medical Jurisprudence.

Before our certificates can be recognized as equivalent in value to those of such advanced States as New Jersey, we shall have to secure State legislation on a par with the requirements read. And should any member of our Society ever be approached with the statement that our laws are too stringent, let him refer to the States of New York, New Jersey and Pennsylvania and express the hope that some day we shall be enrolled in the same class with them.

With the close of this year expires the term of Dr. Leonard B. Almy, a member of this Board for six years, and it falls to your lot to elect his successor to serve for a term of five years. Appended is the list of successful applicants and also a list of the colleges represented by all candidates for general practice together with a tabulated statement of results. There is also appended a copy of the rules and regulations concerning the examination which it is desired that every member of the Society should read. It seems to be unknown to not a few members that graduates of colleges of high standing must nevertheless pass an examination before they can acquire the right to practice in this State.

Respectfully submitted,

(Signed) Max Mailhouse, Secretary.

List of Medical Colleges represented by all candidates examined during past year:

	PASSED.	REJECTED.	CONDITIONED.
Albany Medical College,			1
Baltimore University School of Medicine,	1	2	
Bowdoin,	1		
Coll. Phys. & Surg., Baltimore,	1		
Coll. Phys. & Surg., Boston,			1

Coll. Phys. & Surg., New York,	4		
Dartmouth,	1		
Harvard,			1
Jefferson,	2		1
Laval University,	1		
Johns Hopkins,	2		
Long Island Hosp. Med. College,		2	
McGill,			1
Missouri Medical College,	1		
Toronto Medical College,	1		
Tuft's Medical College,		1	
University of Baltimore,		1	
University of Michigan,	1		
University of New York,	2		
University of Pennsylvania,	3		
University of So. California,		1	
University of Stockholm,		1	
University of Vermont,	2	1	
Women's Medical College of Kansas City,		1	
" " " " Pennsylvania,		1	
" " " " N. Y. Infirmary,	2		
Yale,	8		
Non Graduates,	2	1	
Total,	35	11	6

List of those examined and passed:

1898—June 21-22.

Bronson, William T., M.D., '98, University of the State of New York, of Derby.

Edgerton, Francis G., M.D., '98, College of Physicians & Surgeons of New York, of Middletown.

Gleeson, James J., M.D., '98, University of Pennsylvania, of New Haven.

Goodwin, Mary E., M.D., '98, Women's Medical College of the New York Infirmary of New York City.

Maguire, E. O'Reilly, M.D., '98, College of Physicians & Surgeons, New York, of Derby.

McCarthy, James J., M.D., '96, College of Physicians & Surgeons, Baltimore, of Naugatuck.

Monagan, Charles A., M.D., '98, University of Pennsylvania, of Waterbury.

Moore, H. F., M.D., Missouri Medical College, of Naugatuck.

Pelton, Henry H., M.D., '98, College of Physicians & Surgeons, New York, of Middletown.

Stillman, Martha R., M.D., '96, Women's Medical College of the New York Infirmary, of New London.

July 21-22.

Blackmar, John S., M.D., '98, College of Physicians & Surgeons, New York, of Norwich.

Cassidy, Patrick J., M.D.,, '98, Johns Hopkins University, of Norwich.

Guilshan, John J., M.D., '98, Yale University, of New York City.

Hungerford, Henry E., M.D., '98, Yale University, of Bristol.

Hulbert, Russell, M.D., '98, Yale University, of Middletown.

Rider, Charles A., M.D., '98, Yale University, of West Redding.

Tyler, Herman A., M.D., '98, Yale University, of Hartford.

Sept. 21-22.

Coe, John W., M.D., '98, Johns Hopkins University, of Meriden.

Gailey, John J., M.D., '98, Bowdoin University, of Watertown.

Haire, Edward A., M.D., '98, Baltimore University School of Medicine, of Derby.

McLinden, James J., M.D., '98, University of Pennsylvania, of Waterbury.

Porter, Lewis B., M.D., '98, Yale University, of New Haven.

Reilly, Walter A., M. D., '98, Bellevue Hospital Medical College, of Bridgeport.

Smith, Charles L. P., M.D., '98, Yale University, of New Haven.

Nov. 8-9.

Hunter, Garnet L., M.D., '98, Toronto University, of New Canaan.

McKone, James N., M.D., '98, University of Vermont, of Hartford.

O'Donnell, Edmund E., M.D., '98, Yale University, of Ansonia.

Onderdonk, Harrie J., M.D., '97, University of the State of New York, of Poughkeepsie, N. Y.

Pike, E. R., M.D., '98, University of Michigan, of Abington.

March 14-15.

Hertzberg, George R. R., M.D., '99, Dartmouth, of Stamford.

McKee, Fred L., Class of '99, College of Physicians & Surgeons, New York, of New York.

McMaster, G. Totten, M.D., '98, Jefferson Medical College, of New Haven.

Pratte, A. A., M. D., '93, Laval University, of Taftsville.

Tuttle, Frank J., M.D., '98, University of Vermont, of Naugatuck.

Wood, Howard L., Class of '99, Albany Medical College, of Albany, N. Y.

STATE EXAMINING COMMITTEE REPRESENTING THE CONNECTICUT MEDICAL SOCIETY.

H. S. Fuller, M.D., Hartford, President.
Max Mailhouse, M.D., New Haven, Secretary.
Leonard B. Almy, M.D., Norwich.
J. Francis Calef, M.D., Middletown.
J. W. Wright, M.D., Bridgeport.

RULES FOR EXAMINATION.

1. Examinations will be held on the second Tuesday of March, July and November, at the City Hall, New Haven, beginning at 9:30 A. M., and lasting two days, closing at 4 P. M. of the second day.

2. Examinations wil be conducted in writing in the English language.

3. Examinations for general practice consist of ten questions in each of the following branches:

1. Anatomy. 2. Surgery. 3. Materia Medica, including therapeutics. 4. Practice, including pathology and diagnosis. 5. Obstetrics, including gynecology. 6. Physiology. 7. Medical Chemistry and hygiene. Of these the candidate may elect any eight questions on each subject.

4. In order to be admitted to practice, the applicant must attain the average of 75 on a scale of 100 in each branch. It is provided, however, that if the applicant falls below the required standard in only one or two branches, he may be conditioned for four months and appear for re-examination at the end of that time. If he then attain the requisite rank in the branch or branches in which he previously failed, he will be entitled to his certificate.

5. Applicants to practice midwifery will be examined in obstetrics only, and must attain an average of 75 on a scale of 100 to be admitted.

6. Examination fee, $10.00, payable in advance. In addition to such fee the candidate shall, if successful, pay twenty cents, as required by revenue law, for revenue stamps. This sum to be sent to the Secretary of the Examining Committee, upon receipt by the candidate of the duplicate certificates.

7. Candidates once rejected must pay full fee on an-

other trial. Candidates conditioned must pay five dollars on re-examination.

8. Graduates of Medical Colleges are requested to present their diplomas, for inspection, to the Secretary of the Committee at the opening of the section.

EXTRACT OF LAWS OF 1897.

No person, after passage of this act, shall obtain or receive a certificate of registration until he has passed a satisfactory examination before one of the Examining Committees, etc., etc.

CONCERNING REGISTRATION.

(a) No person, be he a graduate of whatever medical college, or licensed by or in whatever State, can be admitted to practice in this State, before and until he has passed an examination by one of the Committees in this State.

(b) Upon passing his or her examination and receiving duplicate copies of his certificates, he must file these duplicate certificates with the Secretary of the State Board of Health (Dr. C. A. Lindsley, 15 Elm Street, New Haven), together with duplicate statements subscribed and sworn to by him upon blanks furnished by said Board of Health, giving his name, age, and place of birth, and present residence, stating whether he is a graduate of any medical college or not, and if so, of what college, and the date of such graduation, etc., etc.

Upon the receipt of such statements, the State Board of Health shall issue, upon the receipt of two dollars, to the person filing the same, a certificate of registration. In addition to said fee of two dollars, he must pay twenty cents, as required by federal law, for revenue stamps.

SEC. 9. Upon the receipt of any duplicate statements as hereinbefore provided, the State Board of Health shall transmit one of said duplicate statements, together with a duplicate of the certificate of registration in each

case, to the Town Clerk of the town wherein the person so filing said statement resides; and in case such person does not reside in the State of Connecticut, then the State Board of Health shall transmit said statement and certificate to the Town Clerk of the town in this State nearest to the place of residence of such person; and said Town Clerks shall record the same in books to be provided for that purpose by the State Board of Health, and shall then return the same to the person who filed the same with the Board of Health; and said Town Clerk shall receive for such recording a fee of twenty-five cents, to be paid by the State Board of Health out of the amount so paid to it as aforesaid.

RULES FOR CONDUCTING EXAMINATIONS.

First. Help of every kind must be removed from the reach and sight of the candidate. Any candidate detected trying to give or obtain aid shall be instantly dismissed from the room, and his or her paper for the entire work canceled.

Second. Questions must be given out and answers collected punctually at the time specified for that section.

Third. If the candidate withdraws himself or herself without permission, from the sight of the examiner, his or her examination shall be closed.

Fourth. All examinations shall be in writing. Pens, blotters, paper and ink will be supplied by the Secretary.

Fifth. The examinations shall continue two days, the sessions of the first day being from nine thirty to eleven, eleven to one, two to four, and four to six, respectively; the sessions of the second day being the same, but closing at four instead of six o'clock.

No one can practice in this State while waiting for an examination, or while waiting to make up conditions.

Appended is a set of the questions given at the last examination on March 14 and 15, in order that the members of the Society may see for themselves with what degree of fairness the examinations are conducted. It must be borne in mind that the candidate may select eight out of the ten questions on every subject and he is marked on the eight answered.

EXAMINING COMMITTEE, CONNECTICUT MEDICAL SOCIETY.

NEW HAVEN, March 14-15, 1899.

Anatomy.

1. Give the points at which the cranial nerves issue from the brain.
2. Name the bones of (A) the skull, (B) the face.
3. Describe the gross anatomy of the spinal cord.
4. Describe the great trochanter of the femur, naming and locating accurately the attachment of muscles and tendons to its several parts.
5. Describe in detail the lesser omentum.
6. Name all the structnres involved in the superior radio-ulnar articulation and describe how pronation and supination are accomplished.
7. Name and describe the action of the muscles of the posterior scapular region.
8. Give the surgical anatomy of the internal jugular vein.
9. Locate and describe the solar (epigastric) plexus.
10. Give the number, name and a brief description of the permanent teeth.

Obstetrics.

1. Give the boundaries and diameters of the pelvic outlet.
2. What is the usual position of the placenta and its functions?
3. Name and classify the diameters of the fetal head.

4. What conditions may be mistaken for pregnancy?
5. Give the causes of abortion.
6. Describe the symptoms and treatment of, placenta previa.
7. Describe the mechanism of labor in the L. O. A. position.
8. Describe the symptoms of puerperal septicemia.
9. What are the causes and symptoms of puerperal eclampsia?
10. What is a dermoid cyst?

Materia Medica and Therapeutics.

1. What is the physiological action of Tartar Emetic?
2. Contrast the action of Strychnine and Potassium Bromide on the nervous system.
3. What are the physiological effects of Chloroform inhalation? How do they differ from those of Ether?
4. What are the physiological effects upon the eye of Cocaine, of Eserine and how are these effects produced?
5. What are the symptoms of arsenical poisoning and the antidotes?
6. What are the therapeutic uses of cold?
7. What is the treatment of acute Pleurisy?
8. Give the therapeutic uses of Belladonna.
9. How would you treat a case of acute Uremia?
10. Write a prescription in Latin unabbreviated, containing four ingredients to be used in Chronic Bronchitis, and give the reasons for using each ingredient.

Surgery and Pathology.

1. Describe the process of repair in an aseptic incised wound.
2. What is the difference pathologically and as to causation between Dry and Moist Gangrene?
3. What are the symptoms, kinds and treatment of Erysipelas?

4. What would you do in a case of strangulated indirect inguinal hernia?
5. Give differential diagnosis between Chancre and Chancroid.
6. What are the varieties of Aneurism?
7. Describe the treatment of Aneurism of the brachial artery.
8. What are the complications which may follow a simple fracture?
9. What is Keloid?
10. What is the difference between Syme's and Pirogoff's amputation?

Practice, Pathology and Diagnosis.

1. Give the clinical history of Lobar Pneumonia.
2. Differentiate between Scarlet Fever and Measles.
3. Give the pathology of Chronic Diffuse Nephritis.
4. What are the causes of hemorrhage of the Stomach and Intestines?
5. Pathology of Endarteritis?
6. What are the symptoms of Anterior Polio-Myelitis?
7. Give the diagnosis of Pericarditis.
8. Describe Herpes Zoster.
9. What are the symptoms of renal Calculus?
10. Complications of Typhoid Fever?

Physiology.

1. Discuss the constituents and coagulation of the blood.
2. Describe the circulation of the blood in the heart and name the valves.
3. What is the nervous mechanism of respiration?
4. What is the physiological function of the stomach and how is it performed?
5. What is animal heat and how produced and maintained?

6. What is secretion and excretion, and give examples of each?
7. Name the different forms of muscular tissue and give examples of each.
8. What is the origin and function of the sciatic nerve?
9. Draw a diagram illustrating the action of the crystalline lens.
10. What is metabolism?

Chemistry and Hygiene.

1. Give the chemical formulae of (A) Bromide of Soda, (B) Chloride of Zinc, (C) Sulphuric Acid, (D) Water.
2. What is meant by a chemical antidote?
3. Name the chief constituents of urine.
4. How would you determine the total daily amount of solids passed in the urine?
5. What is the source and significance of urea in the urine?
6. What is the average composition of pure atmospheric air? Give per cent. by volume.
7. What are the chief sources of contamination of the air?
8. What are the chief water-borne diseases, and how would you determine the germs of each in suspected water?
9. What diseases would you report to the health-officer?
10. How may immunity to yellow fever be acquired; how to small pox; how to rabies?

Dr. Tingley—A question has arisen as to the requirements of eligibility to practice. One man, a medical graduate, has been turned down. The committee examined him and failing to pass he was told there was no redress. His father took the papers and submitted them to various physicians for their judgment and was told

that the son had passed a good examination. Has this committee such arbitrary power, so that a worthy man can be turned down?

Dr. Tingley being declared out of order the Report of Dr. Mailhouse was accepted. Dr. Shepherd raised the point that the present time was given up to hearing the reports of committees.

The Treasurer's report was rendered as the next thing in order. It included also statement from the County Clerks of money received which their Associations had contributed for the Rush monument fund.

REPORT OF TREASURER.

To the President and Fellows of the Connecticut Medical Society:—

As Treasurer, I would respectfully present the following report of the finances of the Society for the year ended May 23, 1899:

RECEIPTS.

Balance from old account		$521.70
Cash received from County Clerks:		
Hartford County	$252.00	
New Haven County	370.80	
Fairfield County	151.20	
New London County	55.80	
Windham County	72.00	
Litchfield County	82.60	
Middlesex County	68.40	
Tolland County	23.40	
Total receipts from taxes		1,076.20
Total receipts		1,597.90

EXPENSES.

Printing Proceedings	$786.57
Postage and expressage	89.44

Printing and stationery	100.30	
Legal advice	80.00	
Salary of Secretary	150.00	
Expenses of Secretary	16.25	
Salary of Treasurer	25.00	
Total expenses	$1,247.56	
Cash on hand May 23, 1899	350.34	$1,597.90

ARREARS IN TAX OF 1898.

Hartford County	None
New Haven County	$48.00
Fairfield County	88.00
New London County	42.00
Windham County	4.00
Litchfield County	2.00
Tolland County	None
Middlesex County	None
Total amount in arrears	$184.00

Comparison with last year's report shows that the Society's income increased nearly $160, partly from increased membership but more from better collection of taxes. The credit for this is of course due to our County Clerks. Last year the Committee of Arrangements in Hartford turned over to the Society $21.90, being the excess of receipts over expenses; this year nothing has been received from this source. It will also be noted that the expenses have been larger by $338.11. This is partly due to the increased expense attending the publishing of the Proceedings and partly to the payment of a bill for legal advice which really belonged to the expenses of the preceding year.

It is very gratifying to mention the diminished amount of taxes in arrears. Hartford and Tolland Counties have resumed their usual position with nothing due; Windham and Litchfield have only small amounts; New Haven and

Fairfield are in better shape than last year; New London being alone in showing an increase.

The Treasurer has received $94.28 as contributions to the Rush Memorial Fund; of this $15.28 was from Litchfield County; $39.00 from Widham County; $40.00 from New London County.

Respectfully presented,

W. W. KNIGHT, Treasurer.

The Report was referred to the Auditing Committee.

Dr. Shepherd then presented the

REPORT OF THE COMMITTEE TO CONSIDER THE RECOMMENDATIONS IN THE PRESIDENT'S ADDRESS.

First. The President calls attention to the action of this Society in 1892, when an Assistant Secretary was added to the list of officers to be elected annually. Since our charter designates all officers of the Society as Fellows, it is evident that the Assistant Secretary is included, and hence Chapter III, Section 2, of our By-Laws needs amending by the addition of the words "Assistant Secretary," and your committee will offer a resolution to that effect in its proper place.

The second recommendation relates to the number of names to be presented by the Nominating Committee in their report. The present By-Law simply requires the nominating of one candidate for each office. An amendment to this rule presented at the last meeting, and which our President commends for your favorable action, requires the nomination of two or more candidates for each office, except that of President, and permits more than one to be mentioned for this office. As this method will allow some option on the part of the Society it will probably be more satisfactory to the majority.

The third recommendation is favorable to the amendment to Chapter V, Section 3, as proposed at the last

meeting, intended to keep out of this Society all who are engaged either directly or indirectly in the advertising, vending or selling of patent nostrums, or secret methods of treatment. Your committee believe that the passage of this amendment will help to sustain the high standard of our membership and be a wise addition to our By-Laws.

The fourth recommendation also relates to a matter suggested at a previous meeting, and favors the cancellation of all licenses to practice medicine in this State when the party has been convicted of crime. At the last meeting of this Society this matter was referred to the Committee on Legislation, and from them we may expect to learn what has been done to secure the desired end.

Our President also calls attention to the effort, suggested at a previous meeting, to unify medical examinations by the State Boards of Examiners, so that physicians who receive licenses in one State shall also be entitled to practice in other States, and suggests that while this may be quite difficult to attain in full, yet that we may be able to so elevate our standard as to enable us to secure this result so far as New York and New England are concerned. No doubt our Committee on Legislation, to whom this matter was referred, will have something to say regarding what they have done, and can inform us regarding the probable accomplishment of the proposed change.

The sixth recommendation is that the Business Committee be composed of the President, Vice President and Secretary, and that they also constitute the Publishing Committee. Such a change as this is intended to facilitate the transaction of business and to secure the publication of our transactions promptly. The present year's program affords an illustration of the results aimed to be accomplished by such a change so far as providing for

attractive papers is concerned, and certainly sustains the views of those who favor such a method. That the Proceedings will possess more value if they can be issued promptly is evident, and the suggestion that this work devolve upon the Business Committee, who are necessarily early familiar with the scope of the papers to be presented, and can thus promptly select those to be published, would appear very desirable. In its proper place your committee will present a resolution to this effect.

We heartily agree with our President in favoring some action by the State of Connecticut to prevent public exhibitions of Hypnotism. The injurious effects resulting from such displays are better appreciated by physicians than by the laity, and it would appear to be our duty to call the attention of the State Legislature to the subject. As this was referred to the Legislative Committee we may expect to hear from them regarding the matter.

A medical directory of New York, New Jersey and Connecticut will undoubtedly be of benefit to the members of this Society, and your committee will introduce a resolution in accordance with the suggestion of the President, that the Assistant Secretary of the Society be a committee to coöperate in this matter.

Respectfully submitted,

GEO. R. SHEPHERD,
FRANK H. WHEELER,
MINER C. HAZEN.

REPORT OF THE MEDICOLEGAL COMMITTEE OF THE CONNECTICUT MEDICAL SOCIETY.

The committee makes the following report of progress concerning the very difficult subject with which it is concerned:

Since the last meeting of this Society your committee has been in frequent correspondence with medicolegal

committees of nearly all the State and Territorial medical societies of the United States with the purpose of deciding upon some uniformity of action. That we are nearer the goal, which all physicians and the best lawyers wish to attain, is certain; yet much remains to be done before legislation should be asked for.

J. Francis Calef.

New Business being the next thing in order, Dr. Shepherd presented the subjects which were a continuation and part of his Report of the Committee to consider the Recommendations in the President's address. These were in the form of two motions. First to amend Chap. III, Sec. 2, of the By-Laws by adding the words "Assistant Secretary" after the word Secretary, so that it should read: "The President, Vice Presidents, Treasurer, Secretary, Assistant Secretary," etc. This was referred to the next meeting in regular order. Second—That the Assistant Secretary of this Society be and he is hereby appointed a committee to advise and coöperate with the representatives of the New York and New Jersey Societies for the purpose of securing the publication of a Medical Directory of New York, New Jersey and Connecticut. This was adopted.

Dr. Tingley apologized for having previously introduced his subject out of order. He said the matter was an unpleasant one. It opens a large field. He desired that we might think it over, that it might be discussed, that we rectify what is wrong in the working of the Committee on Medical Examination. It is not right that such a thing should have happened.

Dr. Storrs moved to lay the subject on the table until the regular business of the program had been finished.

Dr. Tingley—It is too important a matter to be laid aside. Would like to have it discussed for a short time and then have a committee appointed to investigate.

Dr. Cassidy stated that he was the one most interested

and if the chair would give him the privilege he would like to make a statement. The Report of the Committee, he said, was not true and he wanted a history of that examination given to the Fellows.

Dr. Tingley moved that a committee of three be appointed by the chair to investigate the prerogatives of the Examining Committee. The motion was seconded but on vote, was lost.

Dr. Rodman, presiding, presented a communication requesting that this Society send Delegates to the International Medical Congress at Paris, 1900, who shall also solicit papers for the meeting. The communication will be found in full under Appendix A.

A motion was passed that we acknowledge receipt of communication and that the President appoint a committe of five for the purposes specified in the letter of the Secretary of the Congress, Dr. Glover, of Paris.

The Committee on County Resolves reported that Litchfield County had presented the resignations from membership of Doctors H. B. Griswold of New Milford and W. S. Munger of Watertown. The report was accepted.

They reported further that Dr. C. S. Stern had been exempted by the Hartford County Association from payment of dues in accordance with the following resolution: Resolved, That the dues of members of this Society who are at present serving in the U. S. Volunteer Service be remitted during their time of service. The committee approved of the Resolution and recommended that its purpose be extended to apply to the entire Society. This was adopted.

A memorandum had also been received from the Middlesex County Association endorsing the action of this Society as expressed in Resolutions found upon page 34 of the Proceedings of 1898. This required no action by the committee and was simply examined.

The committee to nominate Essayists on the Progress of Medicine and Surgery reported for Surgery, Dr. T. L. Ellis, Bridgeport; Dr. N. R. Hotchkiss, New Haven. For Medicine, Dr. C. B. Graves, New London; Dr. A. G. Nadler, New Haven.

The Report of the Nominating Committee being called for was given by Dr. Carmalt. The committee retired for a moment and made a slight change in their report. The names presented are:

President.

C. S. Rodman, Waterbury.

Vice President.

Leonard B. Almy, Norwich.

Treasurer.

W. W. Knight, Hartford.

Committee on Matters of Professional Interest in the State.

L. W. Bacon, Jr, J. G. Stanton.

Committee to Name Physician to Retreat for the Insane.

Drs. Kent and Edgerton.

Publication Committee.

N. E. Wordin, J. LaPierre,
O. T. Osborne.

Committee on Honorary Members and Degrees.

S. B. St. John, J. N. Granniss.
Geo. L. Porter.

Anniversary Chairman.

R. A. McDonnell.

Committee of Arrangements.

J. W. Seaver, S. D. Gilbert,
C. P. Lindsley, F. H. Wheeler.

Medical Examination.

C. B. Graves, New London.

Dissertator.

Frank W. Wright, New Haven.

Alternate.

John Slade Ely, New Haven.

Delegates to American Medical Association.

C. J. Fox, J. W. Wright,
G. R. Shepherd, L. D. Bulkeley,
P. Cassidy, J. M. Keniston.

Delegates to the Maine Medical Society.

T. M. Hills, P. N. Ingalls.

Delegates to the New Hamsphire Medical Society.

R. Robinson, E. L. Pratt.

Delegates to the Vermont State Medical Society.

James Campbell, T. B. Bloomfield.

Delegates to the Massachusetts Medical Association.

W. H. Donaldson, H. G. Howe.

Delegates to the Rhode Island Medical Society.

H. L. Hammond, W H. Judson.

Delegates to the New Jersey Medical Society.

R. W. Kimball, Frank W. Wright.

Delegates to the New York State Medical Association.

Elias Pratt, M. C. Hazen,
F. S. Cowles, T. F. Rockwell.

The Secretary was instructed to cast one ballot for the names reported and the candidates were elected.

The result of the balloting having been announced by the Secretary, Dr. Rodman presented his thanks for the honor of his election, saying:

"I thank the Society for the honor conferred in this election which is accepted with no conceit that it implies pre-eminence in the profession. If we continue this or-

ganization as an historical society or one for the mutual improvement of its members in another and higher sphere of existence, no doubt the wisest and the best will always preside at our deliberations. It is, however, gratifying to believe that after thirty years of work in medicine one has friends rather than enemies among his associates and competitors in his native town, his county and the State. The obligation to work for the Society is the greater; assured of your support and coöperation I will do what I can to maintain the good name and promote the welfare of the Connecticut Medical Society."

The Auditing Committee reported that they had examined the accounts of the Treasurer and found them correct.

On motion of Dr. Carmalt it was voted that the Secretary be empowered to add the names of Delegates to the American Medical Association to the number of twenty.

Dr. Fuller reported from the Committee to nominate Physicians to the Retreat for the Insane that there had been no vacancy, no business to come before the committee and that nothing had been done. The

REPORT OF THE COMMITTEE ON MEDICAL LEGISLATION

Was made by Dr. Storrs.

At the last annual convention the following amendments and resolutions were referred to the Committee on Legislation:

First. Limiting the number of meetings of the Examining Board to three annually, fee of twenty-five dollars from each candidate, having a diploma showing him to be a graduate of a respectable medical college and having spent at least three years in the study of medicine.

Second. To revoke without possible recovery the license of any physician who shall have been convicted before a proper tribunal of crime in the course of his professional acts.

Both of these proposed amendments were presented, with others, to the Legislature in 1897, and were rejected. They are found on record in the proposed Medical Practice Act iu the Proceedings of 1897, page 32, section 5, and page 34, section 9.

Third. That the Committee on Legislation be requested to consider the advisability of, and secure legislation for, prohibiting public exhibitions of hypnotism.

Fourth. A matter referred to the Committee with power to act comiug as a resolution from New Haveu County, and found on pages 30 and 31 in the last Proceedings. It provides for a test examinatiou of children's eyes in the primary department of public schools, with notification to parents where there is any deformity.

Auother matter—State Reciprocity—foreshadowed in the closing paragraph of the last Report of this Committee, and found in Proceedings of 1898, page 39, and alluded to in the Report of the Committee on Medical Examiuations, found on page 43.

A meeting of the Committee was held December 6th, 1898, to take suitable action upon the foregoing amendments and alterations. It had, however, come to the knowledge of the Committee, that the Medical Practice Act would be attacked in the preseut Legislature, but by whom, and to what exteut, no one could certainly say. But it seemed best to the Committee not to press auy legislation this year, but to defend the law that we already have. This position seemed also wiser as we had had a hard struggle with the last Legislature. The Committee believed that we ought not to seek legislation every year unless the need is urgent, but to place on file from time to time such desired measnres, and wait a favorable opportunity.

Early in the session the bill in opposition was introduced which was in effect to repeal the examination feature of the law, which had been in operation for the last

two years. Examinations have thrown out candidates, about one-half, as unfitted for practice. This has been done by the faithful and conscientious action of the Committee. Failure to meet the high standard of qualification has engendered the opposition to this feature of the law, but fortunately this opposition came just as the State was beginning to see the good results coming from the thorough work of its Examining Committee.

The Legislative Committee, the Committee on Examination and many friends of the law, rallied in full force at the hearing before the Judiciary Committee. It showed an interest in the law, and the loyalty of the profession in its maintenance. The opponents of the law did not put in an appearance, and a simple statement by our attorney, Mr. Gross, was made and an adverse report of the bill was secured. It is hardly to be believed that any further attempt can or will be made to overthrow the law. But it is necessary to be on the watch and it is incumbent upon the Society to show their appreciation of the painstaking efforts of the Committee of Examination, and to realize more the delicate and difficult work which they have to perform.

There was another proposed measure introduced into the Legislature coming from without, requiring a re-registration when a physician became permanently located in another town. This was opposed on the ground of its being unnecessary and was defeated.

The measure for testing the eyesight of children in the schools in charge of a special committee, was passed. For the text of this law and the work done you are referred to the Report of said special committee.

It may be mentioned that since our last meeting a somewhat different interpretation has been given to the law in reference to the holding of meetings for examination of candidates. The committee now meet less fre-

quently, and this with a greater number of candidates, solves in part the question of remuneration.

On the whole, a survey of the medical legislation for the year is not without some reasons for congratulation, the ineffectual assault against the law, begetting confidence in its strength and steadfastness; some new legislation secured; some modification of interpretation of certain points of the law; all these in one way or another provide much that was desired. That our medical law is wise and appreciated is evident from its growing favor and popularity throughout the State.

The question of State Reciprocity will soon call for a solution. It is well to keep this matter in mind. This State holding to the highest standard of qualifications, can demand reciprocity of any State. It is a courteous exchange, resting upon the equality of the work of the Examining Boards, and not at all upon the superiority of numbers either of men or of institutions; neither upon a large or small State, as New York, or Connecticut. This State will license the physicians that New York has licensed, and vice versa. But we cannot, as has been suggested, carry the interstate idea so far as to form an alliance with the medical schools so as to make the diploma and the license practically to come from the same Board, whatever that Board may be. As a State, Connecticut must insist for the present upon the sovereign right to examine all physicians coming into the State until a satisfactory reciprocity arrangement is made. A license in connection with medical schools would soon revert in effect to the old order of things, the diploma would be tantamount to a license. The States must, through their Boards of Examination have, as we have before said, a sovereign power over the medical schools, ruling out the indifferent ones and regulating the unhealthy competition of others; thus arresting the flood of irresponsible practitioners in the State.

There ought to be legislation upon one other point, but the Committee would not recommend at present any action. The Committee have in mind Christian Science Healing. This iniquity is attracting public attention, and here and there the culprits have been indicted. The Committee believe that the public will before long suppress this glaring fraud without any direct help from this Society.

All of which is respectfully submitted.

M. Storrs,
E. F. Parsons,
J. Bryden Kent,
E. J. McKnight.

REPORT OF THE SUB-COMMITTEE ON LEGISLATION.

By vote of the Society's Committee on Legislation the preparation and introduction of a law to provide for the Testing of the Eye-sight of Children in the Public Schools were referred to a Sub-committee. Colonel L. F. Burpee whose aid was at once sought, in accordance with the action taken by the Society in 1898 and the suggestions of Secretary Hine, of the State Board of Education, drafted a bill which has since been enacted by the General Assembly. On March 1st a hearing was held before the Committee on Public Health and Safety; there appeared and spoke in favor, Colonel Burpee, Drs. Storrs, Stearns and Osborne, School Superintendents Kendall and Tinker, Judge Cowell and the members of the Sub-committee, Drs. Rodman, Goodwin and Wordin. While many cities and Health Boards have instituted examination of the eyesight of children, we believe that Connecticut is the first in the State to enact a law for this purpose and we congratulate the Society upon this result. We are under especial obligation to Colonel Burpee who has given his services to the Society, drafting the bill,

going to Hartford with the Chairman to confer with Secretary Hine, courteously introducing those who appeared at the hearing and in every possible way advocating the passage of the bill. The text of the statute is herewith subjoined.

C. S. Rodman,
R. S. Goodwin,
N. E. Wordin.

AN ACT PROVIDING FOR THE TESTING OF THE EYESIGHT OF PUPILS IN THE PUBLIC SCHOOLS:

Section 1. The State Board of Education shall prepare or cause to be prepared suitable test cards and blanks to be used in testing the eyesight of the pupils in public schools, and shall furnish the same, together with all necessary instructions for their use, free of expense, to every school in the State.

Section 2. The Superintendent, principal or teacher in every district, some time during the Fall term in each year, shall test the eyesight of all pupils under his charge according to instructions furnished as above provided, and shall notify in writing the parent or guardian of every pupil who shall be found to have any defect of vision or disease of the eyes, with a brief statement of such defect or disease, and shall make written report of all such cases to the State Board of Education.

The Report of the Publication Committee was read and accepted.

REPORT OF THE PUBLICATION COMMITTEE.

The committee, to which was intrusted the publication of the annual volume of the Proceedings of the Society, believes that the work was never more satisfactorily

completed than in 1898. The volume was the seventh of the series, commencing with the centennial volume in 1892, to be delivered bound in cloth to each member of the Society. It is hardly probable that anyone would now desire to return to the old fashion of publishing an annual paper-covered pamphlet, of which four annual numbers were considered to be one volume.

The committee, believing it to be in accordance with the sentiment of the Society, excluded all advertising matter, in this particular also placing our Proceedings in an equal rank with those of the most progressive of the Societies of neighboring States.

It is believed that the custom established in 1897, of placing at the beginning of the volume a table of contents indicating the different subjects treated of, in the order in which they occur, by enabling the reader in a very few minutes to obtain an idea of everything included in the volume, will prove of more practical utility than the alphabetical index formerly provided which often failed to reveal the location of a particular article, unless its exact title were known.

There was some difference of opinion in regard to the propriety of publishing a few of the papers presented. The Secretary assumed the responsibility of withholding from publication a paper read before the Society by one of the delegates, a former member of this Society. A part of the committee heartily disapproved of this action of the Secretary, and greatly regretted what might be construed as an act of discourtesy to the representative of one of the youngest of our sister societies.

GUSTAVUS ELIOT,
JULIAN LAPIERRE,
N. E. WORDIN,
Committee on Publication.

Dr. Kendall rendered a written report for the Committee of which he is chairman.

THE COMMITTEE ON HONORARY MEMBERS AND DEGREES

have found that there are no recognized rules and customs which govern the action of this committee from year to year, except to the number of names that can be presented, but that each year the committee decides for itself what course it shall pursue and does much, little, or nothing without thought of responsibility.

The committee this year take the ground that the roll of Honorary Members is not a device for the Society to honor itself by including among its members the great names in medicine, nor a device to express its reverence and honor to those names by placing them in its honorary list. It is rather a device to bring into relations with the Society, by making them Honorary Members, men who otherwise can have no organic union with the Society, as all its active members must be identified with the State of Connecticut. This device puts these men on a footing with the active members as to the scientific and literary work of the Society, giving them an opportunity to appear before the convention, and also making them liable to be called upon by the Business Committee to prepare papers for our annual meeting. Prominence and reputation are secondary recommendations to this honorary list. Far higher and more promising recommendations are present active interest and work in the profession and a willingness to communicate their best thought and generalizations, as the part of men who have a standing that makes them worthy to receive the honors of this Society.

In accordance with this conception of duty and privilege the committee propose as Honorary Members of the Connecticut Medical Society, to be voted upon one year hence,

J. W. S. Gouley,
Seneca D. Powell.

The committee finds a memorandum of the committee of a former year whereby Dr. Frederick Holme Wiggin was duly placed in nomination before the Society. It is in order that a ballot be now taken upon this name.

J. C. KENDALL,
H. L. HAMMOND,
C. E. MUNGER.
Committee on Honorary Members and Papers.

The Report was accepted and it was further voted that the Secretary cast a ballot for Dr. Wiggin as an Honorary Member of the Society. This was done and announced.

Dr. Howe announced for the Committee of Arrangements that the Hartford Medical Society invited all to a smoker this evening and to-morrow the dinner would be at six P. M. It was put at an early hour so that all the gentlemen might take their train that night; that there would be a good dinner and interesting speakers.

The meeting of the President and Fellows adjourned at 4:20.

THE ANNUAL CONVENTION.

WEDNESDAY, MAY 24, 1899.

The mass meeting was called to order immediately after the adjournment of the meeting of the President and Fellows. The first item was the

SECRETARY'S REPORT.

Among the changes proposed or already made in the management of the Connnecticut Medical Society, none is perhaps more conspicuous than the one hereby introduced. At the suggestion of the Business Committee, the Secretary's Report is being published in advance, so that it may reach at once every member and perhaps more interest may be awakened for the annual meeting.

In the movement of the Society there is but little change in the year just passed. There has been a smaller number of accessions and, happily, fewer deaths. Our membership is six hundred and sixty, a net gain of only sixteen. Last year the gain was twenty-six and since our centennial year the average annual increase has been a little more than twenty. There have been fewer removals from the State, only a few have been dropped for non-payment of dues, two have resigned. Two counties, Windham and Tolland, report a diminished number.

The changes by counties are as follows:

Hartford, 1898,		142
Died,	2	
Removed,	3	
Dropped,	1	
	—	6
		136
New members,	10	
Reinstated,	2	
	—	12
		148, a net gain of 6

New Haven, 1898,		189
Died,	2	
Removed,	2	
	—	4
		185
New members,	9	
Reinstated,	1	
	—	10
		195, a net gain of 6
New London, 1898,		50
Removed from State,	1	
		49
New members,	2	
		51, a net gain of 1
Fairfield, 1898,		122
Died,	2	
Removed from State,	2	
	—	4
		118
New members,	6	
		124, a net gain of 2
Windham, 1898,		35
Died,	1	
Removed from State,	1	
	—	2
		33, a net loss of 2

Litchfield, 1898,		50
Resigned,	2	
		48
New members,	3	
		51, a net gain of 1
Middlesex, 1898,		40
Died,	1	
Removed from State,	1	
	—	2
		38
New members,	3	
		41, a net gain of 1
Tolland, 1898,		18
Removed from State,	1	
		17, a net loss of 1

Only two counties sustain a loss, but these two are least able to bear it. Among the changes to be noted are two of importance. Of the twenty-four members lost, only one has been dropped for non-payment of dues, while of those gained a number have been previously members of the Society and have returned to us voluntarily by payment of past dues. Of the twenty-six new members, twenty-two go to Hartford and New Haven Counties. Windham and Tolland alone have none.

Last year New London and Litchfield had each fifty members. This year each has gained one and the equality remains.

The following is a list of new graduates with their present residence and place and date of graduation:

Frank S. Snow, Albany Medical College, '89, Hartford.

Elmer E. Douglass, P. & S., Minneapolis, '94, Barnes' Medical, St. Louis, '95, Hartford.
Howard F. Smith, B. A., Yale '94, Yale, '96, Hartford.
Thomas W. Chester, B. A., Rutger's, '92, M. A., '95, P. & S., N. Y., '95, Hartford.
Joseph A. Kilbourn, P. & S., Baltimore, '97, Hartford.
William J. Coyle, Buffalo Medical, '85, Windsor Locks.
Philip P. Carlon, University N. Y., '90, Hartford.
William G. Craig, Jefferson, '92, Hartford.
William S. Kingsbury, Yale, '96, Glastonbury.
John S. Ely, Ph. B., Yale, '81, M. A., Columbus, '97, P. & S., N. Y., '86, New Haven.
Peter F. Metz, University N. Y., '93, New Haven.
Horst R. Oertel, Yale, '94, New Haven.
Elmer T. Sharpe, University N. Y., '95, Derby.
Donald R. Hinckley, B. A., Yale, '92, Harvard, '96, New Haven.
Michael J. Sheahan, Yale, '96, New Haven.
Maximilian L. Loeb, Yale, '97, New Haven.
Edward F. McIntosh, Yale, '97, NewHaven.
William N. Winne, University N. Y., '97, Westville.
Griswold Brazaw, Bellevue, '97, New London.
Herbert E. Smyth, McGill Univ., '84, Bridgeport.
Harry R. Bennett, University Vt., '96, Bridgeport.
Leonard W. Munson, Georgetown Univ., '96, Stamford.
James W. Gordon, Bellevue, '88, Sandy Hook.
J. Murray Johnson, L. I. Med. Coll., '95, Bridgeport.
George D. Wright, Bellevue, '87, Bethel.
Myre J. Brooks, P. & S., Univ., Ill., '97, Rush Medical, '97, Stamford.
Ernest K. Loveland, Yale, '97, Watertown.
Sanford H. Wadhams, Yale, '96, Torrington.
Charles S. Warner, Jefferson, '96, Litchfield.
Charles W. Page, Harvard, '92, Middletown.
Allen R. Defendorf, B. A., Yale, '94, Yale, '96, Middletown.

Emma J. Thompson, Woman's Med. Coll., N. Y. Inf., '96, East Haddam.

It requires only a casual glance to see that among the medical colleges represented, Yale easily leads. In fact, out of the thirty-two graduates, ten are from that medical college. The University of New York is next, with four; Jefferson and Bellevue, each three.

The dead are eight in number. Among these are one ex-President of this Society, William Green Brownson.

Dr. Brownson graduated from the medical department of N. Y. University in 1865 and joined this Society during the year following. In 1879 he was chosen President of the Fairfield County Medical Association and in 1882 President of the Connecticut Medical Society. His address the next year was in rhyme. It was an innovation, acceptable to all and well received. He took for his theme "The Country Doctor," relating many events in his own experience (for he had settled in New Canaan) which were fully appreciated by many present. I quote from the Proceedings of that year, 1883, page 10: "He was listened to very attentively and interrupted frequently with applause as some hits struck home, to the appreciation of his listeners, to many of whom the experiences were very familiar. At its conclusion the following resolution, offered by Dr. G. L. Porter, was passed unanimously upon the subsidence of the lengthened applause that was given to the doctor at the close of his humorous and faithful presentation of the peculiar trials and the rewards that fall to the lot of the country doctor: Resolved, That the thanks of the Society be extended to Dr. Brownson for his classical and most interesting poetical address, and that a copy be requested for publication. Dr. Brownson was a man of fine address, pleasant, clear voice and a good reader. These added weight to the sentiments, some of which may well be repeated here.

Our lives are like the volumes on our shelves;
Their style and binding show our outer selves:
The gilt or plainer dress our rank or birth,
Still but the printed page can give them worth.

As then, so now, and through all future time,
Each grand achievement touches the sublime:
Within each field of learned labor lies
For all who will contest, a fitting prize:
The higher flight demands the higher aim,—
'Tis only these that fetch the heavenly flame.
Aiming and striving thus, still aiming high,
Till backward we behold the radiant sky,
Still onward, may we reach the golden way,
The brighter light of an eternal day.

Beside this poem Dr. Brownson made very few literary contributions to the Proceedings. In 1891 he was appointed physician in charge of the Soldiers' Home at Noroton. This gave him the opportunity he desired, of retiring from active practice, and for the remainder of his days he faithfully served the State. His influence for good made itself felt upon the inmates of the Home and the theme of his funeral discourse upon which many changes were rung was the Christian gentleman.

Dr. Roswell Fox, of Wethersfield, was up to the time of his death one of the oldest practitioners of the State. A student of Prof. Valentine Mott, one of the greatest teachers of surgery, he graduated from the University of New York in 1847. His early education was at Bacon Academy of Colchester, so celebrated in its day, and his professional life extended over more than half a century. He leaves two sons, active members of this Society, C. J. Fox, of Willimantic, ex-Surgeon General of the State, and E. G. Fox, of Wethersfield.

Farnham O. Bennett graduated from the Berkshire Medical College in 1859 and joined this Society in 1866.

Winthrop Bailey Hallock graduated from the L. I. Coll. Hospital in 1864. He joined the Society in 1871 at Middletown, where he was connected with the Connecticut Hospital for the Insane. While first Assistant Physi-

cian of that Institution, in 1871, he contributed a paper for the Proceedings, in which he advocates, The Cottage or Family System for Treating the Insane. He states his propositions clearly, supports them ably and shows himself progressive and humane in the management of those bereft of reason. Later he left the State Institution and established one of his own at Cromwell, which has been very successfully maintained.

Oliver J. Treadwell was a graduate of the Academical Department of Yale, class of 1862. He counted among his classmates Dr. George M. Beard, Gov. Daniel Chamberlain and Buchanan Winthrop.

Dr. Henry Doutteil is an illustration of the advantages which this country offers to an adopted son with purpose and push. A native of the Province of Hesse Cassel, the son and grandson of physicians, in 1867 he came to the United States and took up a residence at New Haven with the determination of entering the medical college. Working in the factory by day, by night making translations from the German, rising to the editorship of a German journal, he obtained his object and graduated in medicine in 1880.

In addition to the regular work of the office, other things have been added from the business of last year's meeting. The Society voted last year that the Secretary be authorized and directed to print in pamphlet form a suitable number of copies of the Code of Ethics of the American Medical Association for distribution among its members, and that each new member be furnished with a copy upon admission to his County Association. In accordance with this, two thousand copies were printed. Some of these were sent directly to the County Clerks. The members not thus provided are receiving them at this time with the annual announcement.

The question of vivisection has been of late prominent

in legislation and this Society by resolution attempted to use its influence to secure such humane and scientific investigation upon animals as would be helpful to the physician in learning the cause and cure of disease. In accordance with those resolutions your Secretary communicated with Senators Hawley and Platt and received replies from both of them.

The Rush Monument Fund is in the hands of the county clerks who were appointed at the last meeting, each one a committee for his own county.

The Secretary would urge that all papers intended for publication be sent to him through the proper channels as promptly as possible. With a new plan which has been adopted, of putting them in print as soon as they have been approved, the Proceedings can be issued with but little delay.

The Society seems to be prospering and it is certainly to be hoped that the various amendments to the By-laws which are to be acted upon this year will bring fresher literary work for the meeting and more interest in the proceedings.

Delegates appointed to attend the meetings of other Societies were called upon to report. The first one to respond was Dr. Hammond who visited the Vermont Society. He said:

Arriving in the afternoon your delegates were introduced to the Society and were cordially received. Dr. Hammond introduced the resolution pertaining to the vivisection act as we were instructed and this provoked a general discussion on their own State law or want of a State law which measure was greatly advanced by certain ones being delegated to push it more rapidly. Dr. Hammond made a little speech showing the working of our own Medical Practice Act, which was duly appreciated and the Doctor was thanked by their President for the various points which he gave them.

Among the papers were several of deep interest. The banquet, which was given at the Brooks House, was elegant and the general good time was enjoyed by your delegates.

During the two days' session, eighteen papers were presented.

Doctors M. M. Johnson and T. D. Crothers of Hartford were present also

Dr. J. B. Kent attended the meeting of the Society of New Jersey, held at Asbury Park. He was well received and had a very pleasant time. New Jersey has an aggressive Society, up to date in all that pertains to medicine and surgery. There were many able papers of interest. One which attracted him very much was on How to Manage Dairies and Milk-Farms. Milk was spoken of and shown to be a culture medium. It was proven beyond doubt that a certain epidemic of scarlet fever had come from a milk-farm, to which it was traced. A milker, one of the hands employed, had had the disease. While convalescing, but during the period of desquamation, he returned to his work. Many children in families where this milk was taken, had the disease.

The resolutions offered by Dr. Carmalt at our last meeting, upon the subject of Vivisection, were presented but similar ones had been already adopted. He spent a very pleasant day.

Dr. O. T. Osborne reported his visit to the meeting of the New York State Medical Association.

Gentlemen of the Connecticut Medical Society:—

It has fallen to my lot to make the report for your delegation to the New York State Medical Association.

Perhaps you will remember that we went to New York instructed by this Society to further the resolution passed at the last meeting, viz., to ask other State Societies to pass resolutions of condemnation of, and to urge their

Senators and Representatives to oppose, all national legislation aimed against scientific research and investigation, under the mask of, "Acts to prevent cruelty to animals."

We presented this resolution which was received with enthusiasm by the New York Association. The President informed us that just such action as we asked for had been taken by their Society at the previous meeting.

The above communication from us was voted received, and unanimous approval given.

Perhaps the most generally important subject discussed at this meeting was that of the care of tuberculous patients, and the great necessity for State Sanitoria for the isolation and proper treatment of such cases before we can expect to even begin to eradicate this disease.

One of their evening meetings was made so interesting, by two lantern lectures, as to suggest the advantage of such illustrated papers for our own Society.

We were more than courteously received, and royally entertained, and can but remember with pleasure the hospitality of the New York State Association to the delegates from the Connecticut Medical Society.

OLIVER T. OSBORNE.

No other Delegates being able to report Dr. E. P Douglass read the first paper, the subject of which was, Decimation of the Race by the Tubercle Bacilli. He was followed by Dr. A. G. Cook on Our Legal Responsibility in the treatment of Fractures. This elicited considerable discussion by Doctors Parsons, Harris, Gurdon W. Russell, Kane and Bailey.

It being near the hour of six, the meeting adjourned.

In the evening the Hartford Society gave an exceedingly pleasant reception, informal and social in character.

THURSDAY, MAY 25.

The convention was called together at 10:30 and the meeting was opened with Report on the Progress of Medicine by Doctors Osborne and E. K. Root.

Dr. Simpson followed with the Report of the Committee on Matters of Professional Interest in the State. The Dissertation was presented by Dr. C. C. Beach, his subject being Insects as Carriers of Disease, and the hour of twelve having arrived, Dr. Stearns read his address, Irresponsibility of the Insane.

Dr. Storrs made a motion that the thanks of the Convention be given to the writer for his able address on a subject on which he is an expert and upon which we ought to be better informed. This was adopted and the meeting adjourned to 1:45 P. M.

Before separating Dr. Rose of Hartford presented a pathological specimen, an appendix removed two years ago. He gave a history of the case.

THE AFTERNOON SESSION

began at two o'clock with a paper upon Normal Breathing in the Treatment and Prevention of Tuberculosis.

Dr. Eliot followed with one on Insanity in its Medico-legal Relations.

Dr. C. E. Munger read Lymphoid Hypertrophies of the Pharyngeal Vault

Dr. Almy gave a recital of his experience in the medical department of the army during the recent Spanish-American war.

The Report on the Progress of Surgery was given by Dr. M. M. Johnson.

Dr. E. D. Clarke of Woonsocket, R. I., was presented to the Society as the visiting Delegate from the Medical Society of that State.

The next paper read was upon Pertussis by Dr. W. H. Donaldson.

Dr. J. E. Root gave the details of a case of fracture of the cervical vertebrae, illustrating with the patient, who was present, and the plaster helmet which was used in the treatment.

The last paper of the afternoon was read by Dr. Walter E. Barber, The Outlook for the Doctor, which was well received.

The other papers upon the program were called for, but no one being present to read, Dr. Ida R. Gridley-Case gave the records of a case of Injury of the Spinal Cord in the Dorsal Region—Diagnosis and Autopsy. This with all the others read by title were referred to the Committee on Publication.

The list of papers referred to the Publication Committee is as follows:

Our Legal Responsibility in the Treatment of Fractures, A. G. Cook, Hartford.

Decimation of the Race by the Tubercle Bacilli, E. P. Douglass, Groton.

Normal Breathing in the Treatment and Prevention of Tuberculosis, G. J. Holmes, New Britain.

Diseases met with during the Spanish-American War, L. B. Almy, Norwich.

Some points of Prophylaxis in the Volunteer Medical Service, J. B. McCook, Hartford.

A Case of Renal Calculi with Operations—Recovery, M. Storrs, Hartford.

Insanity in its Medicolegal Relations, Gustavus Eliot, New Haven.

Lymphoid Hypertrophies of the Pharyngeal Vault, C. E. Munger, Waterbury.

The Relation of Pulmonary Tuberculosis to Insanity, C. E. Stanley, Middletown.

Cerebrospinal Meningitis, F. T. Simpson, Hartford.

Phimosis, L. W. Bacon, Jr., New Haven.

Three cases of Femoral Hernia, E. P. Swasey, New Britain.

The Treatment of Suppurating Wounds, E. J. McKnight, Hartford.

Diagnosis of some Common Eruptive Fevers, F. W. Wright, New Haven.

Whooping Cough, W. H. Donaldson, Fairfield.

The Prophylaxis and Treatment of Common Colds, F. M. Tiffany, Stamford.

Pneumonia, A. E. Abrams, Hartford.

Differential Diagnosis of Cardio-Vesicular Murmurs, E. K. Root, Hartford.

Fracture of Cervical Vertebræ, with Recovery, J. E. Root, Hartford.

Polydactylism, E. J. McKnight, Hartford.

Ectopic Gestation—Its Etiology, Diagnosis and Treatment with a Report of a Series of Cases, J. Murray Johnson, Bridgeport.

Typhoid Fever, Etiology, W. P. Wilson, Wallingford.

Diagnosis, W. J. Delaney, New Haven.

Treatment, M. C. O'Connor, New Haven.

Milk Treatment—Its Production and Care, S. Pierson, Stamford.

Its Consumption, F. C. Graves, Bridgeport.

Theory and Uses of Vibration as a Form of Massage, Kate C. Mead, Middletown.

Albuminuria—Functional Albuminuria, H. E. Smith, New Haven.

Prognostic Value of Albuminuria in Chronic Nephritis, C. A. Tuttle, New Haven.

Albuminuria in Life Insurance, C. S. Rodman, Waterbury.

Life Insurance Examinations, T. M. Cahill, New Haven.

Reminiscences of Medical Men, M. C. Hazen, Haddam.

The Outlook for the Doctor, W. L. Barber, Waterbury.

Radical Treatment, E. W. Goodenough, Waterbury.

Headaches, R. E. Peck, New Haven.

Resolutions were adopted in accordance with the suggestions made by the Committee on Matters of Professional Interest in the State.

WHEREAS, Consumption, the most prevalent and most fatal disease among us has been proved to be infectious and therefore preventable, and

WHEREAS, We believe it to be our duty as physicians to inform the public of this fact as the first step to stamping out the disease; therefore, be it

Resolved, That through the public press we announce to the citizens of our State that the disease generally known as consumption is not hereditary but acquired; that it is caused by a germ; that that germ is found in the sputum of the persons sick of the disease and that by the complete destruction of all such sputum, consumption may be caused to disappear.

Resolved, That as physicians, we believe that consumptives in hospitals should be in a ward by themselves and that therefore a Hospital for Consumptives should be built at the expense of the State.

Resolved, That the County Associations be called upon to agitate the subject and to bring it before their members, so that we may be prepared to act intelligently in the future when any action may be taken before the Legislature.

A motion was also made and passed that the Committee on Legislation be instructed to endeavor to secure the enactment of a law to the effect that practitioners of medicine or midwifery already convicted of criminal offenses and also all such as shall hereafter be convicted of such offenses together with any who indicted on similar charges shall forfeit their bail, shall have their licenses revoked.

The Convention then adjourned.

N. E. WORDIN, Secretary.

PRESIDENT'S ADDRESS.

PRESIDENT'S ADDRESS.

IRRESPONSIBILITY OF THE INSANE.

"When a man loses his reason it becomes necessary that the reason of others, to a greater or less extent, shall supply its place."
—Isaac Ray.

The law of necessity which is enunciated in the above statement is the basis of all legal proceedings in the care and treatment of the insane. Indeed it may be said to be universally conceded at the present time that when a person becomes insane, he can no longer be regarded as legally responsible for his acts. Every person, therefore, has the right as a citizen of the State or a member of society to expect and claim its protection through some of its agencies if he shall ever pass into a condition of mental alienation.

But on the other hand all are not agreed as to the interpretation of the term insanity. By some, one is regarded as insane only when in a raving or incoherent mental state, or in a condition of manifest dementia or menancholia sufficient to destroy the "free act of the will in the choice of things or actions."

Others go to the extreme in the opposite direction, and regard persons as insane whose opinions and conduct are peculiar or eccentric, and do not conform to the general consensus of belief and practice in the society of which they form a part. When such persons misbehave or commit crimes it is assumed that they must be insane.

The adoption of such a test of insanity doubtless comes from the fact that generally the views and conduct of the insane do not conform to those of the sane. It however is a grave mistake to conclude that peculiarity and eccentricity of thought, opinions, or conduct are in many

cases a proper test of insanity. While it is true that there exists in society a tendency among its members to think and act according to some general standard of character, yet this standard presents no definite bounds or forms. Many persons are so constituted by inheritance and early training that they think and act with marked individuality and eccentricity of character. This departure from the common standard may be towards either vigor and strength or degeneration and weakness. Such persons may entertain opinions and beliefs which are at variance with those of their neighbors, and which may become delusions. They may conduct themselves with little judgment, be more unstable, changeable, excitable, or irascible than others. Some persons are very impressionable and ready to adopt new beliefs however improbable, and are ready to embark upon new enterprises which seem to be unreasonable to their neighbors. Such departures from the ordinary standard of conduct range all the way from those which are characteristic of the different fanatical sects, which appear from time to time, to those of Anarchists, Nihilists, and the various classes of criminals in our prisons.

Now shall we account for such variations in the character of thought and action by the assumption that they are the result of disease?

Physiology seems rather to indicate that they arise primarily from hereditary tendencies of brain activities, and secondly, from associations during childhood and the adolescent period. The physiological expression is habit of action rather than disease. The child not only inherits tendencies towards special forms of thought and action, but these become increased and intensified in many cases by its experience of poverty and anxiety during the formative period of life. In fact habit determines with most persons the mode of action in both mind and body, and dominates the sum of our activities. In this

way it tends to develop to a large extent what may be called the differences in individuals. Hence every person differs from every other one, and in the process of development forms habits of expression and action which characterize and differentiate him from all others.

Moreover these tendencies are not limited to those which may have come from the immediate parents, but reach back through generations in two lines of ancestors, thus establishing varieties and large diversities of character. In this way traits of character, physical and mental, healthy and unhealthy, virtuous and vicious, which have lain dormant for generations, may suddenly arise with pronounced activity.

I am under the impression that such vagaries and departures from the ordinary forms of thought and action are more common in this country, where a larger measure of freedom of action and a wider latitude of education and opinion exists, than is common in countries under a more restrictive form of government. They not unfrequently caracterize minds which have had little discipline during the early and formative periods of life ; and they appear in a considerable measure to grow out of the habit of idleness and a lack of application in the performance of some kind of actual work. They do not, however, so far forth resemble the phenomena which are characteristic of the onset and existence of disease.

It is of interest to note, in the evolution and advancement of the law in its relation to insanity and consequent irresponsibility, another test which has at times been in use, viz: that of delusions.

It has been ruled that if by the evidence presented it could not be clearly established that delusions had dominated the mental activities of the person in relation to the act in question, he must be regarded as responsible. Such a test, however, is only a partial one. Delu-

sions may be an element of insanity or not. Probably all persons have delusions and their conduct and acts are more or less influenced by them, but they do not necessarily render such persons irresponsible. In the sound mind they arise from influences which reach it from without, concerning which the person is presumed to be able to judge and act for himself ; while in the insane they arise from the disordered activities of the brain in relation to past or present experiences, and the person is unable to change them or be free from their controlling influence.

Another test of insanity has for many years been in use by both English and American courts. This consists in the capacity of an individual to understand the character of his acts,—whether they are right or wrong. This position was taken by the English judges in the celebrated MacNaughton trial in 1843. Not very long ago in our own State a person whose sanity was in question, was put to plea because it was admitted in the testimony of the physicians that undoubtedly he could understand the meaning of a plea of murder in the second degree.

But such a test of insanity is entirely at variance with opinions formed from clinical experience with the insane, and few medical men who have such experience will be found who will yield assent to such a proposition.

While intelligence is essential to sanity, it is not a test of insanity. Many insane persons are very intelligent, not only in a general way, but in relation to the character of their conduct and its issue, whether bad or good, right or wrong. The important fact, however, to be borne in mind, is that such intelligence does not form the basis of their conduct. This depends, as in the case of children, largely upon the state of feeling. Feeling takes the place of reason in the conduct of both children and the insane, and it becomes necessary to supplement the defective reason of both by that of others.

It may here be stated that the genesis of nearly all forms of insanity is through the emotional centers of the nervous system. These, and not those of the intellect, are the first to become affected, so that the equipoise of relation between the sympathetic and intellectual faculties, which is essential to healthy mind, is destroyed. The exaggerated feelings, passions and appetites of the insane are the chief factors which influence the course of mental action and largely dominate the conduct of the insane. This fact though first enunciated by Guislain many years ago, has within more recent times been especially emphasized by the adoption of new and more extended forms of classification of the insane. Such terms as Epileptic insanity, Masturbatic insanity, Adolescent insanity, Hysterical insanity, all point to the importance of this distinction.

We may now advance a step further and add that the conduct of the insane in many cases, in contrast with that of the sane, is the outcome of morbid impulses over which they have only partial or no control. Indeed it is not unfrequently the case that the person has struggled against the impulse and regarded it with horror and actual terror. The mother of the newly born babe sometimes realizes that she is becoming deranged, and recognizes the character of the feeling which is beginning to dominate her brain, and begs to have her offspring removed before she loses entirely the power of self-control, and harms it. We do not need to wait until the homicidal act is accomplished in order to decide that such a person is insane.

I am aware that this illustration may be regarded as an extreme one, but it serves to indicate clearly the fact which is true in most forms of insanity, namely, that the derangement may affect something more than the intelligence as to the nature of the act, and thereby shows the fallacy of the Macnaughton test which is based upon

an unscientific theory and ignorant conception of the nature of insanity. It seems to have been arrived at from a course of subjective introspective reasoning, and the conclusion that conscious intelligence must eventuate alike in the sane and insane.

The late eminent Judge James Steven, appreciating the importance of some better criteria of action for the courts than the Macnaughton test, sought to improve it by enlarging the signification of it, and giving it a wider interpretation. He claims that the test includes not only "a knowledge of the nature of the act, and the knowledge that the act was a wrong one, but also the power of control, to do or not to do it." This last element of definition certainly is a great advance, and brings the test much more nearly into the range of medical approval.

Having already made allusion to Anarchists as one class of those persons who are characterized by extreme eccentricities of thought and conduct, it may be of interest to continue this reference further.

Prof. Lombroso enumerates under this class such cases as those of Booth and Guiteau in this country, and Lucchini, Ravaillac and Orsini of Italy.

Now while these persons differ from one another, and each one of them has special individual characteristics, yet they posses certain features of character in common.

They nearly all are tainted with a bad heredity. This may be in the form of disease or of vice. One of those enumerated above was an illegitimate child, and none of them ever had the care of judicious parents. All were deficient in moral training during adolescent life.

Archives of Medicine, Vol. seventh, p.p. 306-307.

I have elsewhere *called attention to the fact that such persons are not born with well-balanced brains; that is their faculties are unequally arranged or developed. While they are usually of kindly disposition and amenable to government during childhood, yet as they pass

*Archives of Medicine, vol. 7, pp. 806-807.

into and beyond the period of adolescence they usually become greatly egotistical, self-reliant, and over-sanguine in all that relates to themselves. It is difficult to modify this tendency, or to educate them in any school or seminary of learning, and in fact they rarely become thoroughly educated in any trade or profession. They obtain a smattering of information or experience, but secure very little mental discipline.

Now when such persons are brought to face the battle of life, and have to enter the army of society in competition for their share of the accumulations of capital, they suddenly find themselves at great disadvantage. They see others succeed but do not succeed themselves. One failure after another comes until they find themselves drifting and partly helpless. Such experiences usually serve to bring their innate tendencies towards egotism and self-consciousness to the front, and they begin to question the rights of others to what is denied to them They see a portion of the body politic living in comfort and luxury while they are in want. They find others, who are no more clever than themselves, in positions of influence and offices of emolument while they are in need of bread, and in process of time they drift into the belief that the trouble is with the government or those who administer it, and not attributable to any lack of ability in themselves.

Now we cannot prophesy into what mazes of speculation and uncertainty such characters will come, but they are likely to become erratic, and unusually sensitive to certain forms of influence and theories, especially if these seem to promise a way out of their difficulties, or present opportunities for the gratification of their peculiar desires by bringing them into publicity. They readily assimilate courses of thought and beliefs which are new and strange. In fact the more strange, extraordinary and antagonistic to society they may be, the more ready

are such persons to adopt and carry them into practice, so that their own grievances may be avenged and they may become heroes in some form or other.

Take Booth, for instance. His deformed father, though a man of decided ability as a tragedian, yet was a person of such bibulous and irregular habits that not unfrequently he was unable to appear in an engagement when he was expected.

Booth himself was only half educated, and had led a wandering, erratic mode of life which tended to increase his self-importance and his inherited egotistical tendencies. A person so constituted and educated only requires the occasion and the opportunity, and the temptation to secure notoriety will overmaster all other considerations. Such an opportunity to one of this character rarely comes in a life-time, and its success would enroll his name among those old Romans who dared to do similar deeds. Hence the theatrical exclamation after the deed, "Sic semper tyrannis." The ultimate success of the plot could have never been anticipated or expected, and in this respect it resembled similar ones by other anarchists, but it would make the actor a martyr and blazon his name in the history of what he regarded as his bleeding and suffering country, which would through him be avenged by the death of those whom he had been taught to believe were its chief enemies.

The condition of mind which leads to such undertakings is what Lombroso calls the "true passional state," which develops from the influence and suggestions of companions of the same ilk, and from an environment which makes it possible. Having but a small measure of education and limited historical information, they fix the attention on only one portion of an action.

"In this respect like the criminal, are almost all young men pushed onward into crime by a cause, which is to

their own eyes proportionable to it ; absorbed in one single idea."

In reference to anarchists in general Lombroso says, that "they repeat themselves, continue as if each had been the son of one and the same father, as in America appeared Booth and Guiteau."

Now by comparing what may be termed the supreme acts of these two persons, it at once becomes apparent that the act of the second was inspired by, and so far as could be, copied from that of the first. There was a similar theatrical element about them. Both were committed in the blaze of publicity, and with clear and definite plans of escape from the immediate consequences. Both grew out of disappointment in plans and expectations which had long been cherished and their consummation desired. And it is quite certain that if these desires had been only partially realized, neither of the Presidents would have been in the least danger of assassination. While both made elaborate plans for escape, yet both were ready to pay the penalty of their deeds, if it could not be avoided. Both Presidents had long been the subjects of criticism and the most violent vituperation by many newspapers and political partisans in both sections of the country, and were the centers around which the most diverse political and personal interests and dislikes revolved. Both were at the climax of large political issues which had long absorbed the contentions of the newspapers and public men of all sections of the country.

Referring again to the actors themselves in these great tragedies, we find that neither of them had a high order of heredity. Both had led a wandering and theatrical mode of life, though differing in the form of it. Both had been much in some kind of public life, and had developed a sort of morbid craving for publicity. Both were persons of unbalanced brains ; that is their mental

faculties were unequally developed and one-sided. They were easily susceptible to the influence of plans which promised the gratification of their innate tendencies. Both were vastly egotistical and easily became absorbed in one idea, or in the accomplishment of a single purpose, without the capacity to examine and judge correctly as to its future outcome. Of the two, however, Guiteau was apparently much the most capable in this respect, and much more skillfully sought to guard against consequences.

Lombroso calls attention to the fact that both anarchists and nihilists differ according to the social, industrial and educational conditions of the government under which they live. They develop characteristics more or less prominent according to the form of political or national life of their nation. As a rule they do not become numerous, and indeed rarely appear, in those countries in which the industrial and political conditions are favorable. On the other hand they seem to be indigenous to such countries as Spain, Italy and Russia, countries in which the great majority of the people are hopelessly bound in the fetters of taxation and military service, and have no brighter future to anticipate.

It is true that Booth and Guiteau had never lived under a repressive form of government ; but they were in the center of important political crises, and Guiteau was at the time in a wholly destitute state. He had neither money nor friends, and his former mode of life rendered it impossible for him to obtain any. He was smarting under disappointment in securing the office he had been so long seeking, and he fully understood that the President was the cause of his failure. There was nothing left for him but to return to his former wretched mode of life.

Booth was also suffering from great disappointment and the loss of his long-cherished hope and expectation

as to the outcome of the war, and was unable to discern any future for his beloved South.

These general conditions are similar, though springing from different causes, to those which have inspired other anarchists to homicidal acts. Such characters, however, are so uncommon that they may properly be regarded as a class by themselves, and we may now inquire whether they should be classified with other fanatical sects, or with criminals, or with the irresponsible insane.

That we may be able to formulate an answer to this question, and also to understand more fully other tests of insanity to which allusion has been made, it becomes necessary now to pass on to something more positive in relation to the meaning of the term insanity.

We need a statement or test which will bear analysis, and at the same time can be explained so as to be understood by the court and to some extent by the jury.

But a difficulty confronts us at the outset. The term insanity is an indefinite one. It is not easy to decide where sanity ends and insanity begins. There are as many degrees of mental unsoundness as there are of lameness ; and insanity in its widest signification cannot be defined any more clearly than can the term lameness. The motion of the arm may be slightly impaired, or it may be almost lost. Movement of it may be attended with a little pain or with excruciating pain, or with any degree of pain intermediate between these extremes. In either case the arm may be said to be lame. In like manner the mind may be a little impaired, much impaired, or profoundly deranged. And the inquiry whether a person is insane, when made for the purpose of determining his responsibility, which is always the purpose of the law, is as unscientific and devoid of point as would be the inquiry whether the arm of anyone is lame, when made for the purpose of deciding whether its owner could elevate it to a horizontal position.

Medical men who have long been conversant with the insane, very well understand that there is no such definite entity as insanity, which has a constant and invariable character ; but on the contrary, that there are all shades and degrees of mental impairment and derangement, from those which are of functional origin and of temporary character, to those which are of organic origin and from which patients never recover. Mental disease is however not unique in this respect, and is similar to the disordered conditions affecting other organs of the system.

But the law does not interest itself in the technicalities and finer questions of medicine ; and in considering responsibility, while we do not leave the realm of medicine, we must pass into that of law, and the law is proverbially conservative. A custom or rule which has received the sanction of court usage in any State or country for a long period cannot readily be changed. It has a kind of presumption in its favor to the legal mind. We must therefore accept the conditions as we find them, and be prepared to present to the court as clear and definite statements as possible, and to give reasons for them. For this purpose it becomes necessary to frame a statement or definition of insanity which will cover as far as possible such cases as come to trial in courts.

—The late Sir John Charles Bucknill has defined legal insanity to be "an incapacitating derangement or enfeeblement of mind caused by disease."

While this definition does not cover all cases of insanity, it has the merit of being short, and is not difficult to understand.

An analysis of it discloses three essential elements. The first is that of incapacity. This must be regarded as constituting the basis for all special legal proceedings regarding the insane. The law assumes that all persons who are able to conform to the general conditions of

society, and can understand and obey the restrictions which it places on their conduct, must be held responsible ; and further, that there exists neither obligation nor right to deprive a person of his individual freedom, or to assume control of person or property except he becomes unable by reason of disease to comply with these conditions. It is only when such a change has occurred in his ability to reason and act that he can no longer conform to the laws nor properly care for his person and property, that it becomes the right and duty of others to protect both himself and it.

The second element of the definition is that of derangement of mind. This implies a change in the character of mental activity. It has become abnormal. This may appear in several ways, and must be determined by objective symptoms only. We are unable to examine the movements of brain tissue which attend the thought-process as we do some symptoms in physical disease, and can judge of their character only by their outcome in the form of words, movements and action. These must be examined and compared with those which are known to be normal to the person himself, or to others of the class of persons to which he belongs who are in mental health. It is further important to distinguish between a derangement of mind and an unusual arrangement of mind. The first indicates a change of a morbid character, while the second indicates simply a mental constitution somewhat at variance with that of persons in general, and does not indicate change of character, nor necessarily incapacity.

But inasmuch as such derangement may be created by causes which are temporary in their effects and derange mental activity only while they are in operation, as for example the influence of chloroform, ether, or alcohol, another element of definition has been added as essential in forming a description of legal insanity. This third factor is that of disease.

The nature of the relation which the personality and brain sustain to each other in the thought-process has never been fully demonstrated, and perhaps never will be ; but that mentally depends upon the physiological activities of the brain and nervous system for its character and external manifestation can no more be questioned than can the fact that the movements of the arm and leg depend upon the normal or abnormal condition of the motor centers of the brain which preside over them. Disease, therefore, either functional or organic, and affecting some portion of the brain, is essential to a definition of legal insanity.

In determining the question of legal insanity or responsibility, therefore, it is important to group these three elements of diagnosis together. Not all forms or degrees of disease of the mind incapacitate a person or render him wholly responsible.

Take the inebriate for example. There are inebriates and inebriates. There exists no question that the brain may become so much disordered by the long continued and excessive use of alcohol as to derange the normal activity of the moral and intellectual character of the person. The will power may also be so impaired as to render one irresponsible. And again, by over-stimulation and excitement, followed by periods of abstinence and depression, the brain may ultimately develop a true neurosis, eventuating in alternate states of craving and excitement, with loss of will power, and periods of depressed activity quite similar in character to that which exists in the form of insanity termed folie circulaire.

But on the other hand there is just as little question that the brains of the majority of those who frequently take liquor for the pleasurable sensations it engenders and in so doing become intoxicated, are not so disordered as to render them wholly irresponsible. There are now and always have been many inebriates who have not lost

their power to control and overmaster their craving, and thousands have done it unaided by medicine or the restrictive assistance of others. It is also certain that many others would do so in the absence of temptation, or if it were necessary for them to walk three or five miles for each glass of liquor consumed. The will power would be quite sufficient under such conditions to lead to the lesser inconvenience and effort. If such a person takes alcohol it is because he craves the exhilaration it will produce, and chooses, all things considered, to do so. The claims of society, family, and friends, when placed on one side of the balance, do not outweigh the craving for something to lift the brain into a condition of pleasurable excitement. Whether such craving depends upon some change in the cells of the cortex, or arises from habit, like that of chronic gambling, or is like that of other physical appetites, we need not now discuss. Such persons cannot be regarded as irresponsible.

Again take the case of anarchists. I have already outlined their limitations in many cases as to heredity and environment ; and it goes without saying that such persons may become incapacitatingly insane ; but it does not follow that those who, impelled by the beliefs which are peculiar to the class, or by supposed grievances, or by a defective judgment, commit crimes, are so. The character of their acts, however much it may differ from the standard of the community in which they live, does not necessarily prove insanity. The conduct of the anarchists in Chicago a few years ago in their attack upon the organized authority of the city, by the use of bombs, was as irrational and foolish as were the acts of Booth or Guiteau, yet many of the companions of those who were executed continue to this day to regard them as martyrs in a good cause. It appears, however, that they have been deterred from similar deeds and martyrdom by the penalties of the law, and if any one of them has

ever been committed to an insane asylum the fact has escaped public attention.

I am aware that some authorities would weave the mantle of insanity and consequent irresponsibility broad enough to shield persons with such deficiency of judgment, and hence the difference of opinion which not unfrequently appears among experts in courts. And it may be admitted that in the present state of our knowledge in relation to psychology it is difficult if not impossible to formulate any exact statement which will cover all cases.

The first and prime object to be sought is the protection of society, and secondly, the rights and interests of the individual. We cannot place the individual first in point of consideration. While limitations of mental equipment mey properly plead for leniency of judgment concerning acts which come from erroneous views and partial disabilities, yet they cannot be regarded as rendering the subjects irresponsible so long as they are the outcome of free will and intelligent choice, and are not the result of incapacitating disease.

DISSERTATION.

INSECTS AS ETIOLOGICAL FACSORS IN DISEASE.

INSECTS AS ETIOLOGICAL FACTORS IN DISEASE.

C. C. Beach, M.D.,

HARTFORD.

Mr. President and Gentlemen:—

I must admit that when I was informed of the choice of dissertator for this occasion, it was with a feeling strongly akin to trepidation, that I accepted the honor. For realizing that the one who filled this position was supposed to present to the Society some subject differing from the class of topics generally treated of in the essays, either as regards originality or scope, and fully conscious of my inability to supply the necessary requirements, I endeavored to evade the responsibility in order that some one better fitted might be given the position; but escape was impossible.

As original research was out of the question, I attempted to find some subject which might be of interest, not only to those who confine their work to some one of the many specialties with which our profession abounds, but one sufficiently broad and general to appeal to those in all departments.

Medicine as practiced is in no sense of the word a science, but an art, and I fear that too often there is a tendency to consider it a trade.

Yet the foundation upon which the art of medicine is constructed is scientific, and it is to the labors of investigators in such fields as chemistry, botany, physiology, pathology, bacteriology and anatomy, that we are entitled to make use of the expression, "the science of

medicine." Able essays have been presented to us upon most of the above subjects, giving us an insight into their nature and convincing us of their importance as a means of explaining away many of the mysteries associated, not only with disease, but with the problem of life itself.

There is another department of science, also biologic, which has thus far received too little consideration from a medical standpoint, and yet it is one which we can with perfect propriety accept as another foundation stone in our scientific substructure. I refer to entomology.

By those who have never turned their attention to it, entomology is apt to be considered but little more than a pastime; a sort of harmless recreation for such as are incapable of grasping more profound subjects; while in the opinion of others it is apparently positive evidence of dementia or a retarded mental development: as was evidenced in a contested will case, during the course of which the contestants attempted to prove that the testator must have been of unsound mind owing to the fact that he had been seen chasing butterflies.

On the contrary, not only is it a subject of such intense interest and one requiring such deep study as to have allured some of the brighter minds in the various professions, particularly medicine, but it is considered of sufficient importance especially from an economic point of view, to warrant in various countries the appointment of government entomologists.

Who that ever listened to the late Mr. W. H. Gibson lecture on "Cross Fertilization" can have failed to appreciate at least one of the beneficent offices of insects in nature. In short I know of no position in life where one is not brought in contact with some form of insect, either friend or enemy, and where a partial knowledge at least, of entomology would not be undesirable.

But to us as physicians, there is yet another phase of entomology, which renders it incumbent upon us that we

should acquire some familiarity with the habits of insects, even though we might never hope to become working entomologists, as is the case with bacteriology, respecting which most of us are compelled to be content with but a theoretical acquaintance.

For within a comparatively few years, it has been shown conclusively by various methods of experimentation, that many diseases, the etiology of some of which has been more or less a mystery, are transmitted through the agency of insects. The investigators in this field of research have not been numerous. Yet considerable work has been accomplished, though far less than the importance of the subject would warrant, surprising as it may appear.

Furthermore the results of much of this study have appeared in various journals, devoted especially to general science or agriculture, but rarely in those of a purely medical character, which would explain why so many of us have but a faint realization of what has been done in the way of determining the close association of insects with the etiology of disease.

When we consider also that many of the reports occur only as short extracts or the bare statements of results, it is but natural to suppose that much of the literature published upon the subject has fallen into the hands of very few general practitioners, or having done so has probably attracted little or no attention.

In fact when I first began to search for data with which to prepare this paper, I was at a loss where to find it, and had it not been for the kindness of Dr. L. O. Howard, the head of the Entomological Division of the U. S. Department of Agriculture, I doubt if I would ever have had the heart or perseverance to continue. He very kindly supplied me with a list of journals containing references to the matter which I desired, and offered me all the help which he could furnish. It is the product

of what I have been able to obtain during such a course of reading, that I present to you to-day.

I have no desire to weary you with a prolix description of insect anatomy, but it will not be amiss to call attention to the fact that in some insects, especially the mosquito, the mouth parts are admirably adapted for carrying foreign matter, and that their feet and bodies may serve the same purpose.

Furthermore insects may take into their system with their food, the germs of disease which later may afterwards be voided with their excreta in an unaltered condition and with vitality in no way impaired. As insects are extremely inconsiderate little creatures, manifesting the same disregard for our feelings in the choice of location for the deposition of their alvine dejections, that they do indifference to publicity in the performance of certain other acts; and furthermore as flies are almost constant inmates of the household during the warm months, it is fair to infer that we may frequently though unconsciously ingest some of these minute masses of excrementitious matter.

Many parasites in the course of their metamorphosis, both vegetable and animal, require two or more habitats in order to complete their life history, or as it is termed, require an "intermediary host," and there is no doubt that in some instances insects serve this purpose. At times the insects die in consequence, though not until they have performed their mission in life and provided for the perpetuation of their species by laying eggs, while others appear to be wholly unaffected by the presence of the parasites within them, these latter remaining until they have attained a stage wherein they can exist without the insect.

Prof. S. A. Forbes, of Champaign, Ill., in the course of his studies on parasitic diseases of insects, made the interesting discovery that certain cecal appendages of

the small intestines, which were invariably present in the higher Heteroptera, were always filled with bacteria, and that where these bacteria were most abundant, the epithelial lining of the appendages was almost entirely disorganized. This discovery would lead one to infer that the Heteroptera were not only congenial hosts for bacteria, but actually served as a means of their multiplication. And although the bacteria described, were those which were considered as belonging specifically to insects, it is not unreasonable to suppose that other forms of microorganisms, even those which are known to be pathogenetic, may be harbored within the intestinal canal of some of our common insects.

Probably the disease known as Texas Cattle Fever, Cattle Tick Disease, or Red Water, is as good an instance of the essential presence of a parasitic agent to carry and introduce the true morbific cause as any which can be cited. It certainly has been as carefully studied as any, and the results of the extensive investigations are as convincing as the life of the parasite is interesting. It has, however, been so fully presented to the public through the medium of agricultural journals in various parts of the world, that I shall give only a brief outline of it.

It is, in the truest sense of the word, a cosmopolitan disease, and although essentially an affection of warm climates, it can nevertheless be conveyed to almost any locality. As early as 1796, over one hundred years ago, a herd of cattle was driven from South Carolina into Pennsylvania, and although the imported herd was apparently healthy, a fever soon broke out among the domestic cattle which was directly traced to the newcomers. In 1868 cattle shipped from Texas to New York died in considerable numbers on the journey eastwards and also in the New York stock-yards.

These facts caused a great deal of uneasiness, not

alone among those financially interested, but also among the public, lest there be a possibility of communicating the disease to those who consumed the flesh. Investigation was instituted and although the limits of the area in which the fever appeared to be endemic, were determined, it was not until 1889 that systematic experiments were undertaken by the Bureau of Animal Industry, which brought forth most fruitful results.

For some time it had been claimed that the cattle tick was in some manner responsible for the disease, but there were those who were unable to comprehend how the mere bite of a parasite could produce such profound symptoms as usually obtained. Careful microscopical observation however soon demonstrated the presence of a microorganism in the red corpuscles of the blood of those animals manifesting symptoms of the fever, which later were shown to be, beyond a peradventure, the true cause of the same. Field experiments carried on at about the same time proved further, that although the microorganism was the essential cause, the disease never developed without the presence of the ticks.

In the course of these studies it was learned that when newly hatched ticks were placed upon animals which were not immune, the animals so treated invariably developed Southern Cattle Fever. This was also found to be the case when use was made of ticks hatched artificially in the laboratory. In addition it was shown that when healthy animals were inoculated with the blood of those suffering from the fever, the former always became affected, although healthy animals, even when intimately associating with sick ones manifested no indications of the disorder in the absence of ticks.

The organism which was proved by this course of investigation to be the cause of Tick Disease, belongs to the protozoans and is known as Pyrosoma bigeminum. Its manner of attacking the red corpuseles together with

the consequent disorganization of these blood-elements is strongly suggestive of those changes which occur in the human being as a result of the presence of the Plasmodium malariae.

Tsetse-fly Disease or Nagana.

Early explorers in Equatorial and South Africa, had noticed and called attention to an endemic disease in these regions, which went by the name of Nagana; a Zulu word signifying "to be low or depressed in spirits," the headquarters of which appeared to be in the low moist lands lying along the Zambesi river and its tributaries. So formidable did these explorers consider this disease, that they looked upon it as one of the greatest impediments to the colonization of these parts of the world.

Livingstone and other travelers had evidently associated the disease with the presence of a particular fly, which was first brought into notice by Gordon Cummings, Aswell and Capt. Vardon.

In 1850 Westwood, the entomologist, described the fly, naming it Glossina morsitans, and placed it in the order Diptera. The family to which it belongs includes the well-known "bluebottle" and our common house-fly.

The fly, which is viviparous, has mouth organs admirably adapted for puncturing the skin of animals and blood-sucking.

There were some explorers and a few dipterologists however, who claimed that the fly was in no way responsible for the presence of Nagana, attributing the disease rather to change of grass or climate, and criticised the statements of those holding contrary views. Other naturalists reasoned that although the fly might produce the disease, it did not do so by introducing into the animal attacked any specific fly virus, but probably transmitted some bacterial poison; and herein lay the true explanation.

It was known that human beings, when bitten, suffered no inconvenience beyond the local irritation due to the bite, and that indigenous animals also were immune, but that most domestic animals entering the fly country were seized in a few days and died with the symptoms of Nagana.

Horses and dogs are particularly susceptible to it, while teams of oxen and herds of cattle have been entirely destroyed upon coming within the region where the disease existed.

Surgeon Major Bruce on behalf of the Natal government, instituted a series of investigations and found in the blood of those animals presenting evidence of Nagana, a flagellated infusorian, which had the power of actually swimming about and attacking the blood-corpuscles. It made its appearance in the blood-current after an incubation period of from seven to twenty days, and increased rapidly in numbers.

Dr. Bruce further found that when the Tsetse-fly had fed upon a healthy animal it did not transmit the disease to one which it might subsequently attack, but if permitted to draw blood from a creature suffering with Nagana, or if fed upon the carcass of one dead from the same, the animals which it visited afterwards soon manifested evidences of the disease.

Although it has not yet been shown that animals protected from the bites of flies are absolutely immune, it has nevertheless been observed by many travelers, that horses and cattle can traverse the fly country with safety on nights when the insects are inactive,—a fact strongly confirmatory of the theory that they serve as carriers of the disease. The source from which the fly obtains the hematozoon, other than from affected animals, which latter do not exist among the wild natives, has not yet been determined, so far as I have been able to ascertain from my reading.

In the case of the two diseases which I have just given an account of, there is one point which seems to be rather significant; and that is, that in both instances it requires a particular species to carry the specific organism. In other words, without the cattle tick, Texas Cattle Fever is not communicated to healthy cattle, and in the absence of the Tsetse-fly, Nagana does not prevail, for I have not been able to find it stated anywhere that the disease may be transmitted by any other medium. Hence it may be that the tick and Tsetse-fly are essential intermediary hosts for their respective parasites, both of which are hematozoa. Moreover it is known that most animal parasites, as the Filaria Sanguinis Hominis, Bilharzia, and the various intestinal worms require two or more hosts in order that they may complete their life cycle, although in the case of many of them this life history is not thoroughly understood.

When we consider the bacterial diseases affecting man, we find that although many of them may be communicated by insects, yet this is not always essential, since they may be acquired by other means, the fact of the insect serving as a medium being merely a matter of chance. So little attention has been paid to this point, that most of our text-books make no reference to the influence of insects in the etiology of diseases except in some few instances, as for example anthrax, and then simply state the fact.

In the case of tuberculosis, which is admitted to be contagious, I think very few physicians are aware that the bacillus has actually been known to pass through the intestines of the fly; yet as early as 1886 this was shown to be possible. For in that year Hoffman demonstrated the presence of tubercle bacilli in the bodies of flies captured in a room occupied by a consumptive. The droppings of the flies were filled with the bacilli which were shown by experiment to be fully virulent. Six years

later Mr. A. Coppin Jones of Switzerland, by employing cultures of chromogenic bacteria proved that infectious matter can be and actually is carried not only within the bodies of flies but also by their feet.

In one experiment pieces of a culture of the bacillus prodigiosus were mixed in a mortar with some highly tuberculous sputum in such a manner that stained preparations showed these two varieties of microbes to be present in almost equal numbers. Flies were allowed to alight on the sputum, and after they had flown about for a time were permitted to walk over the surface of sterilized potatoes. In forty-eight hours numerous colonies of bacilli made their appearance. From these results we may reasonably conclude that flies do actually carry contagion on their feet, and are probably a constant source of infection, especially in warm climates where germ-growth takes place rapidly and where no means are adopted to exclude flies from living-rooms.

The following account taken from the American Monthly Microscopical Journal also illustrates the possibility of flies disseminating tuberculosis. It quotes Dr. W. R. Aylet, who says: "I smeared a cover-glass with sputum from a well-advanced case of tuberculosis and placed it upon a clean sheet of paper, placing around it seven or eight clean covers. The paper and covers were then placed where flies could have ready access, and soon quite a number were feeding upon the sputum. An inverted tumbler was lowered over them making them prisoners without their knowledge. One of the prisoners soon deposited a speck on one of the clean covers. To prevent this becoming contaminated by their feet, I removed it at once. Within an hour or two all my covers were specked. The covers were then put through the regular cover-slip preparation, carbofuchsine being used for the bacilli with methylene blue as a contrast stain. On microscopical examination the specks were found to

contain one to three thousand tubercular bacilli each." Dr. Aylet stated that he had not tested the virulence of the bacilli so obtained, but that they showed no signs of disintegration and seemed as perfect as those obtained from pure cultures.

In Science for October 28th, 1897, is a short reference to a report made to the French Academy of Science by Spillmann and Haushalter, giving the results of their investigations with regard to the possibility of flies acting as carriers of contagion. These observers examined the excrement and intestines of flies that had fed upon the contents of spit-cups used by consumptives, and found the bacilli of tuberculosis in abundance. The bacilli were also detected in the dried excrement of flies scraped from the windows and walls of rooms occupied by consumptive patients. The researches of Cattoni, Lizzoni and Grassi, which were afterwards confirmed by Simmonds, demonstrated that flies were capable of carrying the germs of various diseases, especially cholera, anthrax and tuberculosis. The particular microbes experimented upon were afterwards readily demonstrated in the excrement of these flies, partly by microscopic examination and partly by direct inoculation. In the case of anthrax and tuberculosis, transmission by inoculation was eminently successful. In addition to the above mentioned method of transmission by means of the excrement of flies, may be added that by dead flies. For after the death of these insects their bodies rapidly dessicate and disintegrate, thus liberating the bacilli which were contained within their intestinal canals, and permitting of their being disseminated with the surrounding dust.

When we consider the frightful mortality resulting from tuberculosis in all its forms, which according to some authorities constitutes one-seventh of the total deaths occurring among the human race, it certainly devolves upon us as physicians to remove all sources of contagion as far as we have power to do so.

Admitting that flies do contribute to the spread of consumption, as we have seen they do, whether in greater or lesser degrees, and appreciating the impossibility as well as undesirability of exterminating these insects, we nevertheless might accomplish much, in respect to this one source of contagion, by discouraging the promiscuous spitting by consumptives in public places. It would certainly be a simple matter for such persons to carry cloths or paper napkins for the purpose of receiving their expectoration, and these could later be destroyed by burning.

Probably no epidemic disease in modern times has occurred more frequently, extended over greater areas of territory and shown itself more fatal than cholera. Although the mortality has varied markedly in different epidemics, some having been exceedingly virulent, the average death-rate is considered to have been about fifty per cent. Ever since 1817 medical writers and investigators have shown the keenest interest in the disease. Each epidemic has been minutely described and a voluminous mass of literature collected. I well remember the alarm existing among the tourists in Europe during the epidemic of 1884. This was the sixth European epidemic and it lingered until 1887. At this time it was almost impossible to obtain accommodations in the hotels of Great Britain, owing to the fact that travelers were afraid to cross to the continent. It was during this epidemic that Koch discovered the comma bacillus, and although there were many who opposed his assertion that this organism was the cause of the disease, I think the majority are agreed to-day, that without the bacillus, cholera cannot obtain. That flies may act as disseminators of this disease has very recently been demonstrated by Sawtschenko, who in the Centralblatt für Bacteriologie gives the results of his investigations upon the subject. He used two species

of flies, one of them being the common house-fly—Musca domestica—which he fed upon broth containing cholera bacilli. Afterwards the entire contents of their abdominal cavities were removed, carefully avoiding all possibility of contamination from the feet of the flies themselves, every antiseptic precaution having been taken for this purpose. Culture-tubes were then inoculated from these abdominal contents, with the result that cholera germs were found in all of the tubes so treated. Furthermore guinea-pigs, into whose vessels some of the contents of these tubes was injected, died as rapidly as though ordinary cholera cultures had been employed for the purpose; showing that the virulence of the bacilli had not been impaired by their residence within the intestines of the insect. Even those flies, which had been fed on cholera broth and afterwards only on sterile broth in the hope of possibly washing out their bowels, showed immense numbers of the cholera bacilli. The same observer found bacilli both in the intestines and excrement of flies as late as the fourth day after having fed them upon the inoculated broth. These observations led Sawtschenko to suggest that not only flies acted as carriers of the disease, but also they might serve as culture media for the bacilli, and he thought that the occurrence of sporadic cholera appearing among those persons living under the most hygienic conditions, might be accounted for by the fact of the bacilli being able to retain their vitality for so long a time within the fly.

Ophthalmia is a disease, which is so rife in the Orient, that as an Armenian expressed it to me once, "Everyone is expected to have it." The spread of this affection is ascribed in very large degree, by Eastern travelers, to the transportation of the contagion on the feet and bodies of flies.

In treating of anthrax, most of our text-books refer to the possibility of the bacilli being introduced into the

bodies of persons by the bites of flies, bnt lay little or no stress upon this means of infection. Yet that flies may at times be the chief if not the sole factors in its dissemination is evident from an account of an epidemic published by Surgeon General Sir Wm. Moore in the Medical Magazine in 1893. After calling attention to the fact that the subject of insects and disease had been only too sadly neglected, he cites the case of a dead dog, having been thrown into a ditch in the parish of Cortal and allowed to remain there. The carcass was soon covered with flies, which subsequently scattered over the place. Soon afterwards an epidemic of anthrax broke ont, which was generally and with reason attributed to this sonrce.

Not only may bacilli and hematozoa be carried by flies, as we have just seen, but even the ova of some of the intestinal worms may be conveyed from place to place in the same manner, as the investigations of Dr. B. Grassi furnish convincing proof. In giving an account of some of his experiments, this observer states, that between his laboratory at Ravellasca, which is on the first floor, and his kitchen, which is situated on the ground floor, there lies a conrt-yard with a distance of about ten meters. He exposed on a plate in his laboratory a number of the eggs of the Tricocephalus. He also hung in his kitchen some sheets of clean paper. In a few hours he found the latter freely specked by the excreta of flies, a microscopical examination of which disclosed several of the eggs of the Tricocephalus. He also caught some of the flies coming into the kitchen and subjected their intestinal tracts to examination. Large qnantities of fecal matter were discovered in which was to be seen numbers of the parasite's eggs. Similar experiments were made with the segments of the Tenia Solium or pork tape-worm, which had been preserved in alcohol and conseqnently had been deprived of vitality and in

about one half hour tape-worm ova were to be found in the abdominal contents of the fly. Although these tests were made with eggs incapable of development, viable ova may of course be transmitted with equal facility in the same manner, and being deposited upon our food gain an entrance into our bodies. If the mouth parts of flies will permit of the passage of such subjects as tape-worm ova, how much more readily may some of the spores of mycotic parasites follow the same course.

In the case of all the diseases of which I have made mention, with the exception of Southern Cattle Fever you will have noticed that flies were the carriers of the contagion. But there is another insect which is equally abundant and as nearly ubiquitous as any creature I know of, extending as it does from Alaska to the Tropics, and which has shown itself a potent rival of the fly as an etiological factor of disease. I refer to the mosquito, which in its most amiable moods is admittedly sufficiently unpleasant, but which when we fully realize the facility with which it can carry and spread disease-germs,may justly be considered the perfection of a pest.

There are three diseases which have recently been associated with the mosquito, viz.: yellow fever, malaria, and that class of affections dependent upon the presence in the blood of the sufferer, of the nematoid worm known as Filaria Sanguinis Hominis.

Had I not already consumed so much of your time and patience, I might be tempted to recite in detail the part this insect takes in the production of these conditions. But as the subject has been very ably written up, I am happy to say, by a member of this Society, and presented in a much more satisfactory manner than I could hope to do it, I will spare you. The article by Dr. Charles F. Craig of Danbury, entitled "the Transmission of Disease by the Mosquito," which appeared in the N. Y. Medical Journal of March 19th and April 2d, 1898, will

prove interesting and profitable reading for any physician, and can be easily obtained by those desirous of enlightening themselves upon this subject. Knowing from experience the difficulties to be met with in procuring the necessary data, I can fully appreciate the labor which he must have expended in the preparation of his paper.

The researches of Dr. Carlos Finlay render it very probable that yellow fever is actually carried on the suctorial organs of mosquitoes, and that persons have been infected by this means.

He claims that the period of incubation of the inoculated disease agrees with that of the natural disease, and further that the duration and intensity of the fever produced by the bite of the mosquito, appears to depend upon the number of punctures inflicted and the quantity of inoculable matter introduced by the insect's sting. A few punctures, one or two, produce no other morbid phenomena than those of benign yellow fever. This led Dr. Finlay to assume the possibility of using this means for imparting immunity against the more severe forms of the fever, particularly as the method is free from peril.

The relationship existing between mosquitoes and the Plasmodium Malariae has been extensively studied and has already produced most valuable results.

The Italian Society for the Study of Malaria, established in 1898, has worked earnestly in elucidating many dark points in the history of this disease and in completing our knowledge of the life cycle of the Plasmodium. Thanks to the efforts of such men as Grassi, Celli and Bignami much information has been furnished us both in regard to the morphology of the malarial parasite and as to the particular species of mosquito which is guilty of harboring and transmitting the same. Nor are the investigations in this direction yet at an end, for in addition to the researches being carried on by the Italian Society,

the English Colonial Office has taken steps to institute earnest inquiry into the causes of the increase of tropical diseases with especial reference to the alarming spread of malaria in India and Africa.

Before closing, I cannot refrain from calling attention to one other disease, which may possibly if not probably have been spread largely through the agency of flies. During the war between America and Spain last summer, typhoid fever broke out in the various camps where our troops were stationed and raged to a most alarming extent. As this is justly considered to be a preventable disease, it is fair to conclude that there was a reckless disregard of the laws of hygiene somewhere. The testimony of those who were in a position to know the facts, would go to show that the latrines were frequently in a filthy condition and that flies were present to a disgusting extent. I was told by one observer that the sides of the latrines as well as the contents of the same fairly swarmed with maggots, while the Rev. H. C McCook, President of the American Entomological Society, stated at one of its meetings, that at Camp Alger flies swarmed around the mouths of patients suffering from various diseases, and were so numerous in the mess-tents as to render it impossible to eat with any degree of comfort. Under such conditions it is easy to believe, after what has been said in the early part of this paper, that the bacilli of typhoid fever may, in some instances, have been transported either within or upon the bodies of these insects.

The only argument I have seen, which could in anyway oppose this theory is that brought forward by Dr. Howard, who calls attention to the fact that the house-fly does not breed in human excrement, while those flies which do breed in this material rarely visit the house. But he admits that under the conditions of camp-life where large numbers of troops are crowded together, and especially

if cavalry regiments are also stationed in their midst, so that large quantities of horse manure may accumulate, the house-fly may breed in such numbers as to cause them to depart from their natural food habits.

In a letter which I received from Dr. Howard recently, he stated that he is now at work upon this theme, and I have no doubt that when the results of his investigations are made known, they will prove a valuable addition to the knowledge already possessed upon this subject.

In the foregoing, I have not attempted to give a complete history of the work already accomplished in this comparatively new field of research, but have endeavored, by reciting some of the published reports furnishing most confirmatory evidence of the fact, to show that insects do serve as carriers of disease. To what extent these little creatnres are responsible for the outbreak and rapid spread of some of the numerous epidemics, which ever and anon sweep over vast areas of country leaving death and misery in their paths, is a question yet to be determined. In some instances insects are the suspected agents, though proof is still wanting to convict them; as for example the alleged association of the flea with bubonic plague.

It is certainly a field rich in possibilities, the limits of which cannot be foreseen, and one of most alluring interest to those who have the time, inclination and experience which renders them efficient elucidators of the conditions governing the minute life by which we are surrounded; in other words, to those who are fitted to solve the mysteries of the "infinitely little."

REPORT

OF THE

COMMITTEE ON MATTERS

OF

PROFESSIONAL INTEREST

IN THE STATE

THE SPREAD AND THE PREVENTION OF TUBERCULAR DISEASE.

REPORT OF THE COMMITTEE

ON MATTERS OF PROFESSIONAL INTEREST IN THE STATE.

The present world-wide interest in the prevention of tubercular disease has arisen naturally from the recent discovery that the observance of a few simple rules of hygiene has had a remarkable effect in cutting down the death-rate of the disease. Cornet in 1895 showed that whereas from 1875 to 1897 the death-rate from Tuberculosis in Prussia remained constant at 3.1 per thousand inhabitants, since that time to 1893, there was a constant reduction down to 2.5 per thousand. During this period, still greater relative reduction had been observed in the prisons and convents in consequence of careful measures in the disposal of sputum. The same result has been found to obtain throughout the world wherever the knowledge of Koch's discovery of the tubercle bacillus in the sputum has gone. In Connecticut fifteen years ago, the death-rate from consumption averaged 2.1 per thousand inhabitants. For the past three years, the average has been 1.5 per thousand, a reduction of 30% and a saving of nearly four hundred lives per year. That the medical profession in Connecticut is keenly observant of the modes of propagation of this disease, is actively fighting its spread and is conservatively favorable toward all practical measures for its prevention, will be shown by the following tabulations of the replies received by your committee. An unprecedentedly large number of men have responded to our inquiries and we wish to express to you our thanks for the interest and the courtesy shown to us in this matter.

That tuberculosis is an infectious disease, is practi-

cally the unanimous belief of the members of our Society. Of one hundred and fifty-two respondents, only three or four explicitly deny the quality of infectiousness. But as to the ease and readiness of transmission, there is a wide difference of opinion. On the one hand, some believe the disease to be only slightly infectious and that heredity is a far more important factor. On the other hand, not a few say that it is not only highly infectious but also contagious. Writing on this point in 1897, Dr. Biggs of the New York Board of Health deprecates the use of the term contagious and says, "It has always appeared to the Health Board exceedingly desirable that a broad distinction should exist in the public mind between the disease and those diseases which are more popularly classed as contagious." On humanitarian grounds there is perhaps a certain justification of the distinction. As popularly understood, the contagious diseases pass directly from person to person from the breath or through contact. The most loathsome and virulent diseases, like smallpox and diphtheria, are called contagious. In the public mind, the statement that consumption is a contagious disease would be alarming and in many cases would give rise to neglect and cruelty. As Ransome says, "A consumptive patient would be considered like a leper in olden days."

In 1895 Cornet detailed experiments showing that microorganisms on a moist surface could not be detached by a stream of air passing over them, and hence declared that the breath of a consumptive is not a source of contagion. But already communications have been published this year by B. Fränkel and others quoting experiments to show that not only in the act of coughing, but also in hawking and in ordinary speaking tubercle bacilli are discharged in the breath and may be received on slides two and three feet away. If these experiments are confirmed, it is difficult to escape the conclusion that

phthisis is to some extent contagions. Bnt nevertheless clinical experience has long shown that in the majority of cases prolonged exposnre is necessary for infection and in many cases will not produce infection and fnrthermore that tubercnlosis in general is conveyed after the manner usually ascribed to the infections diseases, namely throngh the medium of food or drink or the atmosphere laden with dried germs. In view of snch facts, the term contagious seems to be far less applicable than infectious and in onr teaching concerning the infections natnre of the disease, we may well avoid alarming statements. We mnst bear in mind not only the interests and welfare of the community in general bnt also the interests and welfare of the immense class of tnberculons patients.

A vast deal of first hand testimony as to the commnnicability of tubercnlar disease has been brought out by qnestions 2 to 23. All that can be done within the limits of this paper is to present certain cases illustrating different points in the problem of transmission of the disease.

First. Seventy-nine physicians have personal knowledge where two or more cases have occurred in the same family within a brief period of time.

Dr. Rienzi Robinson. Three sisters, Number 1 dying of consumption, cared for by Number 2 who contracted it but recovered, cared for by Number 3 who contracted it and died.

Dr. J. W. Seaver. Three sisters. The oldest contracted the disease during long attendance upon an old consnmptive. Coming home to die, she was cared for by the youngest in the absence of the second one. The youngest developed the disease. The second came to care for her and within two years all were dead.

Dr. Wright, Bridgeport. Thomas C., aged twenty-

five died from tubercular consumption in 1896. His sister in 1897, another in 1898, his mother in 1899. A father and brother survive, both suspicious.

Dr. T. M. Bull, Naugatuck. Three children successively inoculated from consumptive boarder. Parents well.

Dr. J. C. Kendall. Five sisters, three of whom died a few years ago, and two of whom appear to be infected.

Dr. Strosser. Four sons in one family dying inside of three years. They always occupied the same quarters together.

Second. As to cases of consumption acquired in a house formerly occupied by consumptives.

Dr. W. W. Knight. A young man with no tuberculous tendency moved into rooms occupied for many years by two consumptives and died of consumption in about a year.

Dr. Ferguson. A house vacated by a consumptive and occupied by a family of whom three died shortly after of tuberculosis.

Dr. Goodenough. A husband now ill of tuberculosis, following wife and child who both died of phthisis in a house in which previous to their arrival a death from the same disease had occurred.

Dr. Lawson. Case of a servant becoming infected while sleeping in a room formerly occupied by a consumptive servant.

Dr. Peckham. A machinist had the disease and worked as long as he had strength enough in a factory. His place in the shop was taken by a young man, who died of tuberculosis two years later.

Dr. Bull. Child three years old contracted tuberculosis after moving into a house lately occupied by a consumptive.

Dr. Walsh. A brother and sister died of consumption six months of each other. Another brother returned

home after a prolonged absence apparently perfectly healthy, slept in the room which had been occupied by his sister and died of tuberculosis within two years.

It has long been known that in the larger cities many of the houses furnishing one death from tuberculosis would in the course of two or three years furnish two or three other cases. In other words, a certain proportion, say one-fourth, of the infected houses would furnish one-half of the total cases in three or four years. This was brought out some years ago by Dr. DeForrest with reference to New Haven, and still later by the Health Boards of New York and Philadelphia. These cases however might occnr among members of the same family and probably do, in the great majority of cases. The foregoing evidence, which we have presented, the question of house infection is therefore important and is but rarely recorded. It shows definitely and conclnsively that a house in which a consumptive lives is likely to become dangerous not only to his own family but to a new family that comes in later. It is known that the tubercle bacilli may remain active in a house for years. It becomes therefore of the utmost importance for a family moving into a new tenement or flat to know if it is infected with the germs of tuberculosis.

Third. As to the infection with tuberculosis of husband by wife or vice versa, sixty-seven men declare positive knowledge. Here of course we know that a common family predisposition is not the question. (Dr. Crossfield of Hartford relates two cases where a wife in perfect health married a husband in advanced stage of consumption. In both cases, the husband recovered and the wife died of the disease within a year).

Twelve physicians report what might be considered epidemic or periods of unnsual prevalence of the disease.

Fourth. Examples of instances given of infection from tubercular milk-supply.

Dr. Irving. My niece died of tuberculosis acquired from a tubercular cow.

Dr. Calef. Two children fed on unboiled milk from a cow pronounced tubercular and so proven on post-mortem developed in one case pulmonary tuberculosis, in the other intestinal tuberculosis. Both got better, but are not yet free from tuberculosis.

Dr. Bunce. A family in the best circumstances, good history, young people. The baby, under two years, had milk from one specially fine cow. The baby died from tubercular meningitis. The cow on autopsy was found to have tuberculosis.

Dr. Sullivan. A family of Poquonnock, excellent history, invested in a cow which was subsequently condemned, killed and found rotten with tubercle. Four of this family died in fearful proximity to one another. At present I am watching the only surviving child of this family who attributes his present existence to the lucky fact of his hating milk.

What proportion of cases of tuberculosis comes from infected milk and food is difficult to ascertain. At the meeting in London last Fall under the auspices of the Prince of Wales, Sir Wm. Broadbent stated that of sixty thousand cases of tuberculosis dying annually in England and Wales, forty thousand cases were from phthisis, six thousand from Tabes mesenterica, six thousand and five hundred from tubercular meningitis and five thousand five hundred from tuberculosis of the bones and joints. It would seem quite fair to conclude that the cases of Tabes mesenterica constituting one-tenth of the whole and occurring almost wholly in children, come from an infected milk-supply. Some would go further and include the cases of meningitis and bone-disease, both of which occur most frequently in children in the same category. Indeed some have maintained that as high as fifty per cent. of cases are transmitted through

the digestive tract. Ante-mortem and post-mortem tests in Germany have shown at least twenty per cent. On the other hand, not a few assert that infection from milk is very rarely incurred. There is room for a great deal more of investigation along this line.

Fifth. Further evidence of the infectious nature of tuberculosis.

Dr. Bassett. A case of tuberculous disease of the elbow developed in a woman otherwise healthy and with good family history. Apparently the source of infection was a careless phthisical case who lived with the family and persisted against repeated warning in drinking from the common dipper.

Dr. Tudor. A young daughter, robust and apparently healthy, contracted the disease after having washed the handkerchiefs used by the mother in a late stage of the disease and died within a year.

Dr. E. K. Root. Cases where the disease was contracted from the handling and staining of specimens.

Dr. Irving. I am acquainted with a family who were in excellent health until one son acquired consumption in a neighboring city, returned home to die, infected the rest of the family, and every member under twenty-five (six or seven) died within five years.

A dozen doctors refer to periods when they noticed an unusual prevalence of consumption in the circles in which they practiced or were acquainted.

Dr. Moody. A small neighborhood in a country place in which three separate families living near together developed each two or three cases of consumption at about the same time.

Dr. Ferguson. Such a period in Thomaston during the Summer months of '98. Dr. Walsh, Rockville, quotes 1884 to 1887, as such a period in that town.

Sixth. As constituting personal evidence of the com-

municability of tuberculosis, altogether some two or three hundred cases are referred to with more or less detail, and one cannot arise from the perusal of these papers without a feeling of keenest regret that life should be so needlessly sacrificed. Physicians cannot too earnestly feel their responsibility for the appearance of more than one case of tubercular disease in any family.

Summing up the replies concerning the prevailing views of our members on the sources and means of infection, we get the following:

There is a very general agreement that the sputum is the chief carrier of the contagion. The infected sputum in the moist state may be suspended in the air by coughing, may get on to the lips or face and be transferred in kissing, may stick to the hands and be passed along in handshaking, may get on to forks, spoons, cups, spatula, clinical thermometers, dentists' instruments or whatever goes into the mouth, and be innocently though carelessly transferred.

Handkerchiefs, cloths used in expectoration are frequent sources of infection. When moist they infect through the hands; when dry, by the atmosphere. It is interesting to note the recent experiments of Dr. Baldwin, formerly of Hartford, illustrating the ease of infection from the hands of phthisical cases. The hands of eighteen patients, otherwise cleanly persons, under his care in the Adirondacks, were washed and guinea-pigs were inoculated with the washings. Tuberculosis developed in the guinea-pigs in two-thirds of the cases. Unless tuberculous persons use entirely cuspidors or are extremely careful in the care of cloths and handkerchiefs, their hands are very likely to convey infection. The dried sputum as dust may cover the floors, carpets, furnishings, clothing, bedding, in fact the entire environment of a case. This must include in many cases factories and all places of work, railroad stations, all con-

veyances, public halls, theatres, school-rooms, in fact wherever men congregate.

As predisposing causes of greater or less importance are mentioned, heredity, bad ventilation, overcrowding, poverty, acquired debility, careless and filthy practices, carious teeth, diseased tonsils, cuts and wounds of the skin.

Besides the sputum, the contagion carriers mentioned are infected milk, meat, urine, stools, excrement of flies.

We must not fail to secure a correct idea of the ubiquity and tenacity of the tubercle bacillus. Tuberculosis occurs among all races of men and in all climates. Directly it kills one eighth of all human beings; in some countries more than one half. Indirectly it affects a vastly greater number, for scarcely an individual goes through life without bearing within him somewhere scars marking an unsuspected focus of infection. An advanced phthisical patient expectorates several thousand million bacilli per day. The bacilli or their spores live indefinitely, resist sunlight and strong antiseptics for a long time. The consumptive at present has free access to stores, workshops, schools, hotels, in fact to all the walks of life. Wherever we go then, in the open street, in the best kept hotel, in a private house, there is a possibility of infection. Cornet has shown that almost the only place free from the liability of accidental infection is the properly kept surgical operating room. It is no wonder that as the German says "Everyone has eventually a trace of tuberculosis.

Dr. Davis remarks: "I take less and less stock in the doctrine of heredity." This is re-echoed over and over by our physicians. In most cases, the sum and substances of heredity is early and constant exposure. After an analysis of one thousand cases Edward Squire of London puts the influence of heredity at not over nine per cent. and at that he regards heredity as only a ten-

dency to suffer from the disease in general. As far as evidence goes, direct inheritance may take place through placental disease. In other words, tuberculosis may be directly transmitted through the mother just as syphilitic disease may be handed down by the father. But such cases usually develop early. The child of tuberculous parents, like the child of leprous parents, transferred to a pure environment and rightly cared for will escape tuberculosis and should leave his physical delicacy behind him.

Very definite instructions appear to be given by all of our physicians to patients and families to limit the spread of the disease. Combining and generalizing these instructions, we find it taught that the chief point to be observed is the destruction of sputum by fire or otherwise. Other items given are, separate sleeping-rooms, interdiction of kissing, avoidance of patient's breath and of personal contact, paper napkins and spit-cups instead of handkerchiefs and cloths, or if the latter are used, the greatest precaution in handling and disinfecting them, separate dishes and utensils to be carefully disinfected; in case of tabes mesenterica disinfection of stools, partial quarantine of room, that no one may take in his exhaled air, disinfection of clothing and bedding of patient, also occasionally of the room. After the death of the patient the same precautions taken as in scarlet fever.

We think the fact should be emphasized that there is no danger in living with a consumptive patient if proper precautions are taken. These precautions are really simple measures of cleanliness, to be observed by the patient for his own good as well as for the safety of others. It is believed that the consumptive on the way to recovery frequently reinfects himself by his own carelessness. If the consumptive avoids breathing and coughing into the faces of others, cares rigidly for the sputum and keeps his hands scrupulously clean, there is no fear of contagion for others or of self-reinfection.

One difficulty arises in the care of the sputum when the patient is from home. Expectoration upon the street is certainly to be avoided. In sanitariums a pocket flask is provided. For outside patients, a handkerchief or cloth to be kept in a rubber pocket is recommended. It must be remembered however that such cloths must be handled with great precaution.

We must bear in mind also the large number of chronic cases running ten or fifteen years, most of them outside of a physician's care and engaged in work sometime, of the most important character. Isolation or quarantine would be harmful and quite unnecessary in some of the cases. Yet they must all be reached in some way and prevented from doing harm.

Nearly a hundred affirm the belief that tuberculosis is a distinctly preventable disease. Some twenty-five say no. Qualified opinions are such as "Theoretically yes, practically no." "In nine out of ten cases." "Not unless people can be made unselfish enough to look out for others." It is certainly wonderful how within a short time with reference to this disease pessimism has given place to a most magnificent optimism. Nothing could so enhance the reputation of the medical profession and its appreciation by humanity as the banishment of tuberculosis, or its curtailment in some such degree as smallpox.

The remaining questions elicit the opinions of Connecticut physicians as to the feasibility or advisability of various preventive measures on the part of the State or corporations. On all of these questions, the great majority of the physicians take the most advanced ground. Running over these questions as briefly as may be we find eighty-eight advocating that all cases of tuberculosis should be reported to the Health Board as against forty-eight who oppose it. The reasons given against it are "impossible to enforce," "would do more harm than

good," "not until Health Boards are non-political," "doubtful—what's the use of reporting to a Board that thinks it is all right to pile filth on the green," "not unless Health Boards are good for something, i.e., have power to act," etc. Several Health Officers are also on the negative side of the question, apparently on the ground that such a law would be a dead letter. On the other side, it is believed to be of great advantage, first to the patient as emphasizing the need of precaution; second to the community as a matter of instruction and a means of limitation of disease. This does not mean publicity, nor quarantine of individual. Some would limit it to the ignorant or wilfully negligent. It is to be remembered that the Michigan State Board of Health requires notification and registration and that the New York City Board of Health also requires notification, and in the case of tenement-houses inspection under some regulations.

The question of official disinfection after the death of a consumptive is also affirmatively decided by about the same distribution of opinions, though the majority in favor is greater, ninety-nine to thirty-five. This is already done in some States. A still larger number, one hundred and one to thirty-three, are in favor of making it illegal to let any room or house in which a person has just died of consumption without proper disinfection. "It would result in concealment of cases," says one objector. "Not if proper precautions have been taken during life-time of patient."

The remarkable experience in Naples one hundred years ago, resulting from compulsory notification and disinfection, should be commonly known. In 1782, the death-rate from tuberculosis there was ten per one thousand. The disease was epidemic. A public law was passed requiring notification, destruction of patients' clothes and chattels by fire, renovation of premises, re-

moval of sick poor to hospitals. As a result the death-rate fell from 10 to 1.29 per thousand and even to-day that part of Italy is practically free from disease.

Many physicians do not seem to appreciate the importance of requiring a consumptive to notify the proper officials of the nature of his disease before embarking upon an ocean voyage. It needs but little reflection however to perceive that when transatlantic passengers number hundreds of thousands, not a few of whom are going home to die of the disease, some precautions should be taken by which a person or family should not be put into an infected state-room just vacated by a careless consumptive. Nor should any passenger be compelled to share the room of an invalid voyager unless some idea was obtained of the nature of his complaint. Some of these measures seem to be an impertinent invasion of the rights of private individuals. The question to be determined however is the importance they have in the welfare of all. The results of these restrictions are believed to be for the good of the patient himself and all others.

A very important question is, "Should public hospitals be built for consumptives from the poorer classes? To this one hundred and one answer yes, some twenty, no. Unquestionably hospitals or sanitoria will be built for consumptives in the near future in great numbers. Massachusetts is the pioneer State in this direction, having now for six months a State hospital for consumptives at Rutland, for the construction of which about $175,000 was appropriated by the State. The hospital accommodates two hundred and in the first three months eighty-six patients were received, of whom sixty pay the required three dollars and fifty cents per week and twenty-six are unable to pay anything. In the New York and Pennsylvania Legislatures, bills have been introduced to the same end and a bill in the New York Legislature allows every municipality in the State of two hundred

and fifty thousand inhabitants to erect such an institution. As soon as people find out that from 75% to 90% of patients even in advanced stages of tuberculosis are cured in these hospitals, the demand for them will be tremendous. This has been demonstrated by the experience at the dozen continental sanatoria for the past few years. Such a hospital or sanatorium consists of a small number of separate cottages or wards which are little more than sleeping sheds. They can be built anywhere with due regard to drainage or exposure and are being erected in England in numbers. One cannot read the accounts of the results obtained at the Nordrach Sanatorium for instance without feeling that a wonderful revelation has come concerning the management of tubercular consumption.

Asylums, prisons, poor-houses have been and still are hot-beds of consumption. As a means of getting rid of an undesirable class of population this fact is not deplored by some physicians. The majority however call for a change in the disposition of such cases. A very large majority emphatically condemn the practice of admitting consumptives into the common wards of the general hospitals.

Physical examination of school-teachers before granting them appointments is on the whole approved of, though a large minority are opposed or doubtful.

By a proportion of five to one physicians would require factories, railroads, etc., to furnish cuspidors for their employès and to take other suitable precaution under medical supervision.

The communion cup and the common cup are pronounced dangerous as a means of transmitting tuberculosis, syphilis and other diseases by seventy-four against thirty-one who feel there is little or no danger.

Medical inspectors and instructors in hygiene for public schools are approved of by three quarters of those ex-

pressing an opinion. Boston, New York, St. Louis and other cities have such a system. The teachers segregate the apparently ailing who are examined in a suitable room by the inspectors at 10 A. M.

Among results are claimed. (1) The early detection of sickness; (2) the earlier institution of treatment; (3) limitation or checking of epidemics; (4) diminished number of days of absence from school; (5) diminution of chronic diseases; (6) improved health-standard of schools.

Many additional measures are suggested which we give as briefly as may be.

Dr. Platt. Public schools are a source of infection in many cases and an actual source of danger from lack of ventilation. Children should be absent from the building except during hours of recitation.

Dr. Strosser. Towns, Cities or State should put cuspidors on all streets and care for them. Public water-closets and elevators should be disinfected once a week.

Several doctors recommend legislation forbidding consumptives to marry.

Dr. Osborne. Take tubercular men and women out of the factories and children out of the schools.

Dr. Calef. Milk should not be tolerated from any animal not free from tuberculosis. If consumptives were permitted to care for cattle, they should be required to take special pains not to infect them by expectorating in stables or upon anything the animal may eat.

Dr. Storrs. A life insurance policy should not be issued to the applicant if living with a consumptive wife or husband or with any consumptive in the family.

Dr. Beach. It is impracticable to compel scholars and factory employès to submit to an inspector's examination. Spitting on the streets and in public places should be forbidden.

Probably the most important thing to be done immediately is to interest the people in this subject without

whose coöperation nothing can be done. Following the example of other countries and communities, a State Society should be formed as parent to numerous local bodies for the grand object of the banishment of tuberculosis. The most influential men and women should be induced to take hold of this subject and the press should be enlisted as the most influential of all agents. Let the facts be known that the disease is not hereditary but infectious; that it has remarkably decreased in the past few years; that it is curable in a majority of cases if taken in time; best of all that it is in large measure or wholly preventable. These facts alone will certainly induce the people to coöperate with the physicians through legislative enactments, and through personal endeavor and compliance in the banishment of this scourge of humanity. Why should not Connecticut follow hard after such States as Massachusetts and New York in the effort to cure and to wipe out this disease? Your committee would urge that action be taken by the Society at this time to secure legislation for the building of a State hospital for consumptives and to strive for other such sanitary regulations concerning tuberculosis as have clearly received the endorsement of the Connecticut physicians.

F. T. Simpson,
R. A. McDonnell,
S. B. Overlock.

MEDICAL PAPERS.

REPORT ON PROGRESS OF MEDICINE.

I.

EDWARD K. ROOT, M.D.,
HARTFORD.

THE SERUM TREATMENT OF DISEASE.

Perhaps there is no department in which more active work has been done than in the department of serum therapy. While progress has been made in all branches of therapeutics as well as in the science of pathology and bacteriology, it has seemed best to your Committee to confine a report of this character to comparatively few topics. Therefore it has fallen to my share to report the progress made in the serum treatment of various diseases. First,

DIPHTHERIA ANTITOXINE:

I can add little to the able report of Dr. Frank M. Tiffany on the progress of medicine presented at the last annual meeting. Diphtheria antitoxin has, in my judgment, more than held its own in the estimation of clinicians. While the statistics covering the period since the last report have, so far as I have been able to find them, shown the general reduction in the mortality of the disease, there are a few practical clinical points that may be worth mentioning. First, the use of large initial doses is becoming more and more universal. After the first year of life the initial dose is varied from 2,500 to 4,000 antitoxin units, experience showing that with the high grade of serums now made the bulk of the injection is no larger, the danger of serum rashes, urticarias, is much less, and as a rule the one initial dose is sufficient. The additional cost of these highpotential serums should

not deter the general practitioner from using them, when it is recalled that in the majority of instances one initial dose of a 3,000 unit serum will be sufficient, whereas four or five injections of 1,000 or 1,500 unit serum will prove in the end more expensive and far less beneficial to the patient. Immunization with diphtheria antitoxin serum has been practiced freely, and should receive more consideration than it does. In families, institutions, etc., where numbers of people have been exposed to diphtheria, it has been clearly proved that the injection of a few hundred units has a decided effect in preventing the development of the disease.

TETANUS ANTITOXIN:

The use of antitoxin in the treatment of tetanus is proving more encouraging than we at first feared from early experience with the antitoxin.

In the British Medical Journal for February 15, 1899, Dr. J. Galletty reports the case of a boy eight years of age who developed traumatic tetanus seventeen days after injury. The symptoms were all well marked. Two hundred and forty cubic centimeters of tetanus antitoxin were injected at intervals, and the case recovered.

Copley, in the British Medical Journal for February 11th, reports four cases treated with tetanus antitoxin, of which the incubation of two was for ten days and over, and one for only six days. Thirty cubic centimeters of serum were given every six hours, until relief or abatement of the symptoms followed. Three cases recovered and one died.

The use of Intra Cerebral Injections: A case is reported by Dr. Semple in the British Medical Journal for February 7th, in which two and one-half cubic centimeters were injected into the frontal lobe of each hemisphere of the brain, the operation consisting in making a slight incision, laying bare the bone and drilling

through it, and injecting the antitoxin into the brain substance. Twenty cubic centimeters were also injected into the thighs. Recovery followed without untoward symptoms.

ANTI STREPTOCOCCI SERUM:

Anti streptococci serum is now being used in all infections in which the streptococcus is considered to be the most virulent. The difficulties in preparing the serum have heretofore prevented anything like uniformity of results, but of late its use has given considerable satisfaction, both in this country and in England, though by no means what was at first hoped. The one great difficulty in the use of streptococci serum is that it loses its properties after a comparatively short time, usually after three or four weeks. Therefore the necessity of procuring as nearly fresh preparation as possible is essential. Experiments have shown that until streptococci begin to appear in the blood, it is possible to protect an animal by full injection of the serum. After this it appears to be futile to continue the injections.

William H. Park, before the New York Academy of Medicine, quotes several cases in which erysipelas had been benefited, while in some cases the injection of serum had proved of no apparent benefit, Dr. Park believing that pure streptococci infections were comparatively rare, that nearly all severe cases were mixed infections, and therefore streptococci serum could not be expected to have much effect.

Dr. Charles P. McNabb reports a case of cerebrospinal meningitis in which the anti streptococci serum proved useful.

In "The Lancet" for February 11th, Dr. Leonard Wilde reports a case of septicemia treated with anti streptococci serum, and recovery.

In general it may be said that while the outlook for the usefulness of anti streptococci serum is encouraging, we

must still wait for a better serum before relying upon it for its therapeutic action.

ANTI PNEUMOCOCCI SERUM:

In "The Lancet" for April 8th, Dr. J. W. H. Eyre and J. W. Washburn, of Guy's Hospital, report a series of experiments in the preparation of anti pneumococci serum which goes to show that an animal may be immunized by repeated doses of pneumococci toxin, and that the serum therefrom obtained wil protect from virulent cultures of the same organism. The bacteriologists of the New York Board of Health have accomplished similar results, so far as protection of animals is concerned, but are not yet ready to announce their experiments regarding the use of the serum upon the human subject. Probably the same difficulties will be found to exist in the use of the anti pneumococci serum as with the anti streptococci serum, from the fact that pneumonia is rarely due to the single infection of the diplococcus lanceolatus, but more often to a mixed infection of several other organisms, against which no single serum can be expected to be curative. Considering the extreme fatality of our Winter pneumonias, particularly on the sea-coast, the extreme virulence of the poison, in many instances where death often ensues within two or three days, and the very high rate of mortality, in some cities running as high as 45%, it is certainly to be hoped that this serum may be made available to the profession.

THE SERUM TREATMENT OF CHOLERA

has also become a matter of great interest to physicians in the East, especially in India, where Huffkins' inoculation of dead cultures of the cholera bacillus has apparently secured complete immunity among the native populations. In one instance it is recorded that 7,500 coolies were inoculated with these cultures. Of these sixty-three

developed cholera and twenty-eight died, giving a death-rate of 3.7 per thousand. Among the coolies in the same gardens who had not been inoculated, the death-rate was seven per thousand, or over twice as great. In the Hindoo cholera hospitals the mortality from cholera has apparently been reduced 20% by th use of the serum.

THE SERUM TREATMENT OF THE BUBONIC PLAGUE:

Encouraging results have followed the use of serum in this disease. In Bombay, out of 8,000 inoculated persons only eighteen were attacked with the plague, of whom sixteen had recovery and two died. Among the eight hundred and seventy-five persons who had not been inoculated one hundred and thirty-three cases developed, of which one hundred and two died.

While on the subject of antitoxin and serum treatment of diseases, it may not be out of place to call the attention of our members to the rapidly increasing use of glycerine virus in vaccination, as now prepared by several well-known dealers and put up in sealed capillary tubes. It is probable that this is the purest form of bovine virus available, and for this reason the multiple scarifications formerly considered necessary with the ordinary form of bovine virus or humanized virus should not be used, for if two or three points on the arm are scarified and inoculated with glycerine virus, the action will often prove disagreeably severe. One medium-sized scarification, preferably at the point of the insertion of the deltoid, is sufficient, and if done under antiseptic precautions is almost certain to result in a typical pustule.

It is interesting to note that in the report of the sanitary authorities at Berlin, particular stress is laid by the investigators on selecting the exact point of the deltoid for making the initial point of scarification, they claiming that if this point is selected comparatively slight involvement of the lymphatics will follow, whereas if

a point but slightly removed be selected often severe adenitis will follow.

The question is often raised—Do new diseases arise from time to time or are diseases only slowly recognized and differentiated by the gradual improvement of scientific methods? To us, an affirmative answer to both of the queries seems true.

THE PROGRESS OF MEDICINE.

II.

O. T. Osborne, M.D.,

NEW HAVEN.

In responding to the question of the progress of medicine one is met at the start with so many thoughts as to cause psychological vertigo much as had Van Helmont in his dream of entering the cave of medical knowledge. After acquiring one's equilibrium and seeing the labyrinth of medical progression one is in doubt which path to take. With your tolerance I will name a few of these paths that seem to me the most important.

Need I mention the careful decision required for the diagnosis and care of cardiac murmurs, and in some cases the absolute avoidance of, or, if needed, the scientific manipulation of, cardiac drugs. It is also hardly necessary for me to urge the estimation, perhaps roughly, of the urea output to prognosticate the future of, or to intelligently treat, a chronic nephritis, albumin or casts, absent or present, being unreliable for this purpose. It is also catechismal to mention the Widal reaction, if correctly carried out, giving the diagnosis of typhoid fever in a day, making it almost inexcusable to cinchonise a supposed malaria for a week. In passing, I wish to recommend the tincture of the chloride of iron, given regularly every six hours, for typhoid fever, as I believe that it adds to the toxic fighting power of the blood, and certainly clinically reduces the temperature, and mollifies all of the symptoms.

We are now making blood-examinations not only for diagnostic purposes, as for the malarial plasmodia, or for determining the kind and character of an anemia, but

also for the prognostic value of the presence or absence of a temporary lencocytosis, i.e., a short-lived increase in the number of white blood-corpnscles. If this leucocytosis is present in a doubtful case of appendicitis we are warranted in diagnosing pus, while the white blood-corpuscles are always increased in septic conditions and in pneumonia. In fact when in pneumonia they are not increased the prognosis is bad. These lencocytes undoubtedly come in increased numbers as natnre's way of fighting streptococci and staphylococci infections. Leucocytosis does not occur in typhoid or malarial fevers unless some cansative complication is present.

A word about bowel infection, a condition which we have often treated with quinine because of irregnlar chills, and we have even called it a one or two week typhoid, or a "bilious fever." Now, by our means of exclusive diagnosis we discover a separate entity in the shape of irregular chills, often high fever which runs a remittent course, the urine concentrated, depositing urates and phosphates, and giving a strong indican reaction. The tongue is heavily coated, there is often nausea, constipation generally, sometimes tympanites, a yellowish cast to the skin, and the curative treatment is calomel once or twice, and the best bowel antiseptic, namely, salol or salicylic acid in some form. Let me here urge the more frequent examination of nrine for indican as it always denotes the amount of fermentation and putrefaction in the intestine.

We are in the age of scientific chemistry, and with this I inclnde all examinations of bacteria, and what is more important their products and antitoxins. I shall spend no time upon the wonderful medical progress in this line as my colleague will talk about this subject of such vital importance to us. But in passing we should note the continued experimentation with an antitubercular serum prepared by immunizing horses with "tnbercnlin rest"

the "T. R." of Koch. Also it is well to remember that the hectic fever of tuberculosis is due to the streptococci and is a strepococcus fever, and is not due to the tubercle bacilli. Hence we only have this fever when there is suppuration, and in the lungs, at least, creosote or a creosote-bearing preparation is the best treatment. An increased uric acid output seen in febrile conditions, and in some wasting diseases, is due to a breaking down of cells rich in nuclein, and is not due to disturbed urea digestion going to uric acid formation, which old theory has been disproved. This is a strong argument for the administration of some nuclein bearing substance to offset this matabolic loss. For several years I have considered myself a heretic in decrying the absolute withdrawal of carbohydrates from the diet after the dietetic treatment had proved the case to be true diabetes mellitus, and not a simple dietetic glycosuria. And, now, investigators tell us that by withdrawing carbohydrates absolutely from diabetic cases we increase the danger from acetonuria, and they advise the giving of carbohydrates freely whenever acetone is present in considerable amount. I wish to go on record as stating that I believe it to be unjustifiable to persist in a pure proteid diet for a true diabetic case.

We now come to one of the greatest revolutionizers of medication that the world has known, and this also has been reached through physiological chemistry. I refer of course to the glandular extracts. A few years ago the internal secretions of various organs of the body, and more especially of the ductless glands, were not sufficiently understood by physiologists to be of moment to the clinician. Now, however, the therapist has become so much interested in the organic extracts prepared from these glands, and with the study of serum therapy, that in a short paper only a small portion of the subject can be covered.

Perhaps the study of myxedema first caused physiologists to turn their attention to the thyroid gland which was always found atrophied in this disease, and in 1883, Kocher and Reverdin first observed the symptoms due to the removal of thyroid glands from animals. The increased knowledge of internal secretions, and of cell-products, and their various physiological actions has now made such an impression upon the medical public as to cause John Anlde of Philadelphia, in February of '98, to remark that "When we consider the multiplicity and delicacy of the cellular structures of the human body, the interdependencies and complicated relationships of the different organs, together with the profound changes which may result from psychological deflections, the temerity of the American public in practicing self-medication must be regarded as the most astonishing spectacle of the nineteenth century.."

Our interest lies in the glands of the body which are ductless but furnish some elaborate product which is necessary to the human economy. I might say that the most interest has been centered in the life-giving product, nuclein, which was perhaps first brought to our notice in 1894 by Prof. V C. Vaughan of the University of Michigan. He proved that this product which he elaborated had a germicidal action on many bacteria, while various other experimenters claimed that this nuclein furnishes life-giving power to all animal cells. This nuclein can be obtained from the spleen, thyroid gland, testicles and other animal tissues, but Vaughan claims perhaps most conveniently extracted from pure cultures of yeast, by a dilute solution of potassium hydrate.

Now just what is nuclein? Prof. Crittenden says the original term nuclein was applied to peculiar phosphorized substances isolated from the nuclei of pus-cells, and which apparently made up the greater portion of the

nucleus. It was soon discovered that this, or like substances, was widely distributed through nature in both animal and vegetable kingdoms wherever nucleated cells occurred. Kossel discovered that these nucleins largely contained phosphorous, and from his discoveries we separate two distinct groups, those which will with dilute sulphuric acid yield nuclein bases, true nucleins, and those which do not yield such crystalline decomposition products, false nucleins or para-nucleins. A nuclein then is, according to Prof. Chittenden, simply a combination of some form of proteid with nucleic acid. Nucleic acid is an amorphous white power of strong acid reaction, readily soluble in water containing a small amount of alkali, and insoluble in alcohol and ether. Nucleic acid contains a large per cent. of phosphorus, as much as 9% of this element having been found in some forms of this acid.

Promoters of the nuclein treatment of disease state that it is especially indicated where there are pathological bacteria or their products to be combated in the system. They claim, and they undoubtedly do promote leucocytosis, and we know that the white blood-corpuscles are largely protectors of the organism against bacteria. They would then recommend this treatment in such conditions as diphtheria, typhoid fever, scarlet fever, septicemia, and perhaps in conditions of denutrition, but not carrying in the latter case the treatment too far lest we get a hyperleucocytosis. I have noted in the use of these preparations an increased tendency to hemorrhage, nose-bleed, and profuse menstruation. Whether these nucleins and protonucleins as such have a stimulating vitalizing power on the system I am not prepared to state. That we cannot overlook the value of those bearing phosphorus as giving phosphorus to the system in animal form is certainly positive.

Along this same line of therapy comes the use of red

bone-marrow. It is claimed, and I think true, at least its use in anemia bears out the assertion, that red bone-marrow stimulates the formative processes, and increases the rate of production of the red blood-corpuscles. The indication for the red bone-marrow would be any condition of anemia, simple or due to organic disease, amenorrhea, rickets and bone-diseases generally, and even neuralgias where there is lack of nutrition.

Turning now to the products of special ductless glands, we find the subject to be much more of interest because our knowledge is more certain. Brown-Sequard first attracted the world's attention to his wonderful "elixir of life," namely, injections hypodermatically of testicular fluid, but his discovery caused many deaths from septicemia as the method of preparing the substance and its preservation was so crude. Enough to say of this product that we have probably much to learn concerning it, and that orchitic substance has been recommended in such conditions as melancholia and hypochondriasis, as well as in senility.

Our greatest interest in glandular extracts turns to that of the thyroid as this has been the most carefully studied, and to understand the action and uses of this gland perhaps it would be best for a moment to study the symptomatology of the disease called myxedema. Dercum gives the definition of this disease as "A constitutional disease depending upon atrophy of the thyroid gland and characterized by a myxedematous condition of the subdermal tissues and progressive mental failure." In a word, then, the symptoms of this disease are referable to the skin, mental functions and thyroid gland.

Operations for curing goitre by removal of the thyroid gland showed that if the whole of the gland was removed a condition simulating the disease of myxedema supervened, in which the name of operative myxedema has been given, and we know that the thyroid gland is atro-

phied and its glandular tissue is replaced by connective tissue growth in myxedema. We do not know positively just what this loss of glandular action of the thyroid removes from the organism. According to Horsley the thyroid is a blood-forming organ, and he also says that the gland regulates the formation of mucin. Schiff states that the thyroid secretes a substance which influences the nutrition of the nervous system.

As to the chemistry of the thyroid, or its secretion, there seems to be principally a phosphoric acid output. Hence after the removal of the thyroid, or its atrophy, the loss of the secretion of this acid causes the retarded bone-development and slow calcification as seen in cretinism.

We find that not only is the metabolism decidedly disturbed by the removal of the thyroid, but if we feed the thyroid glands to animals, or man, we increase the nitrogenous output, and Leichtenstein and Wendelstadt were among the first to notice that the feeding of thyroid glands to obese individuals caused a loss of body weight, and that there was an actual increase of nitrogenous waste. Also an increase of sodium chloride and phosphoric acid has been found in the urine after the feeding of thyroids.

In 1895, Baumann made a most interesting discovery from a chemico-physiological standpoint, namely, iodine in the thyroid gland, which though in small amount is always found in the active gland, as confirmed by many analysts. This discovery introduces an entirely new idea into physiology, namely, that an element considered foreign to the body has been found normally contained in it in an animal combination. Traces of iodine have also been found in the spleen, suprarenals and ovaries, but the amount has been so very small as compared with that found in the thyroid as to compel the decision that the discoveries must be accidental. Schnitzler has found iodine in the pituitary

body. Prof. Mendel, of the Scientific School, after careful examination of the thymus glands of calves found no iodine in them, though the thymus gland seems closely related in region and function to the thyroid. The activity of the thyroid seems not to be decided by the amount of the iodine found, but by the amount of the colloid material, so that the colloid substance seems to represent the activity of the thyroid gland. (Mendel). The largest amount of iodine is found in this gland between the ages of twenty-five and fifty-five. The location also seems to make a difference in the iodine content of the thyroid, there being more iodine found in the thyroids of people living near the seashore.

Acromegaly is another disease in which we find the thyroid gland generally, if not always, functionally diseased.

Our indications for the use of thyroid extract, or some preparation of the thyroid gland would certainly be theoretically, and has been proved in many cases practically, the proper treatment for those conditions in which the thyroid secretion is diminished. Möbius contrasts exophthalmic goitre, or Grave's disease, with myxedema, the former being due to excitation, and the latter to an arrest of the functions of the thyroid.

The diseases then in which we would use the thyroid extract are: myxedema, cretinism, exophthalmic goitre where the gland had become degenerated, or cystic, instead of furnishing the hypersecretion which is certainly true of the first stages of this disease. Of course thyroid extract should be used in those rare cases where the thyroid gland has been removed. Also by the very property which we have already discussed, namely, that thyroid feeding produces an increased nitrogenous waste, and in some unaccountable way a reduction of the fat of the body, thyroid extract is probably one of the best treatments for obesity.

It is interesting to note that the effects of over-feeding of thyroids, or an over-feeding of thyroid extracts, are similar to those seen in the first stages of exophthalmic goitre, namely, palpitation of the heart, irregular action of it, dizziness, tendency to syncope, and general weakness and debility. Several cases of death have been reported from the over use of thyroid extract. The thyroid preparations also have an accumulative action, and this is of course especially noticeable where it is used in obese cases, namely, where the thyroid gland is probably doing its normal work, and we thus put in the system a greatly increased amount of thyroid secretion. Thus, in giving it to an obese patient we may not find any reduction of the weight for several weeks, and on the other hand after we cease to give the thyroid extract reduction of weight may continue for some time. The same is true of the debility which long use of these preparations causes.

As the first symptoms of thyroid feeding seem to be some cerebral stimulation, or exhilaration, it has been recommended in melancholia, and even in some other forms of insanity. I cannot but feel that as the second stage of thyroid medication is that of debility that it could hardly be indicated in cerebral depression.

In exophthalmic goitre as such the thyroid extract is useless, and even harmful, unless the thyroid gland becomes so cystic as to practically furnish none of its normal secretion. In this disease suprarenal extract will probably be found of much value.

The next internal secretion with which we are most familiar, and which has been the most carefully studied and analyzed, is that of the suprarenal capsules. Prof. Abel, of Johns Hopkins, has perhaps furnished the most careful work on this gland. The greatest interest in the secretion of the suprarenal lies in its power of contracting the blood-vessels, and raising the blood-pressure.

Dr. W. H. Bates of New York was one of the first to draw attention to the powerful astringent and hemostatic properties of the aqueous extract of the powder of the dessicated suprarenal when it is instilled into the eye, the conjunctiva, palpebral and ocular, being whitened in a few minutes. Not even cocaine can produce such an astringent effect and this action is seen with solutions of even less than one per cent. This local action of suprarenal extract makes it very valuable in many eye inflammations, and operations. This same power of contracting blood-vessels is seen on applying an aqueous solution to the mucous membrane of the nose and throat, and hence such applications become of value in hay fever, and in all acute congestions of the nasal passages, tonsils and pharynx. Injection of this solution can but do good in the congestive stage of acute urethritis.

Abel has isolated the active principle of the suprarenal, as a light gray or brownish powder to which he gives the name of "epinephrin." When he furnishes us with a soluble salt of this substance for hypodermic use we will be more than grateful to him. We can by stomach-administration slowly raise the blood-pressure, but with a hypodermic needle we could probably save the life of many a patient dying of shock or of vaso-motor paralysis.

The exact glandular value of preparations of the suprarenal cannot now be stated as the subject is yet in its infancy. Theoretically we should expect it to be of use in Addison's disease, a disease in which the suprarenal capsules are affected, and Abel says we shall know more about this disease from experimentation with epinephrin. It has also been suggested that it be used in certain cases of anemia, and perhaps in certain conditions of heart weakness as in some respects its action is similar to digitalis. Be that as it may, as to its internal uses, the effect of the drug locally on mucous membranes is posi-

tive, and its efficiency will soon be more generally recognized. Thus far no permanent aqueous solution has been made, but ten grains of the dessicated suprarenal to a fluid dram of warm water seems to be the proper strength for local use, although half of this strength is perhaps often sufficiently active.

The extract of the thymus gland is being experimented with, and as I before stated has been found to contain no iodine. Its use can perhaps be thought of in such conditions as lack of bone-development, especially in children, as in rickets, and perhaps in tuberculosis. Preparations from the spleen might be considered in such conditions as chronic diarrhea, and in diabetes where the spleen was the cause.

Cyon of Paris in speaking of what is known of the functions of the pituitary body, says that "this body is prone to be effected by variations of pressure, whether of the cerebrospinal fluid or the blood, and that irritations of this body induce alterations of blood-pressure, slowing of the heart-beat, and an increase in the force of the cardiac contraction." He says that injection of an extract of pituitary body into the veins of animals produces the same results as are produced by electric or mechanical stimulation of the organ.

The only constant condition in which we know the pituitary body to be degenerated is acromegaly, which is a disease primarily of increased bone growth. In this condition we are now studying the use of the pituitary extract.

The value of ovarian extract is still subject to question, although it has been used with apparent good results in many disorders of the female organism, but so many of these conditions are surrounded by hysterical manifestations and psychic phenomena that we cannot always separate the actual results of a treatment from those caused by the impression made on the mind.

As to the value of orchitic extract or fluid, whether or not we can positively get good results as a general rejuvenator, or in mental debility, or in actual impotence, is still a subject for future research.

The testicular extract is prepared from the testes of the bull, and the dose of a D'Arsonval liquid preparation ranges from 1 C. C. to 4 C. C., injected subcutaneously. One of the active principles has been called spermine. It is a phosphate combination, but undoubtedly does not comprise the whole value of the extract.

CEREBROSPINAL MENINGITIS.

FREDERICK T. SIMPSON, M.D.,

HARTFORD.

REPORT OF HARTFORD COUNTY.

Occupation neuroses are certainly new diseases. Whether or not it existed formerly, so far as medical literature shows, cerebrospinal meningitis is a strictly nineteenth century disease. It was first introduced into the field of observation in the form of epidemics, and Connecticut physicians had much to do with its early description and definition. Seen originally at Geneva, Switzerland, in 1805, at Medfield, Mass., in 1806, it was described by Dr. Samuel Woodward in a newspaper printed in Hartford in 1807, occurring in epidemic in Litchfield County. In 1811 another Connecticut physician, Dr. Elisha North of Goshen, published a report on the disease which is considered one of the classics in medicine. At the same time Drs. Haskel, Spooner and Holmes, constituting a committee appointed at Farmington, Conn., published a collective report of the disease. Only considerable later was it observed and studied in France, Germany and Italy. Throughout the century, New England and the United States in general have been a favorite and extensive field of development for the disease, and smaller or larger epidemics have occurred every few years. The earliest epidemics were frightful in their malignity. Woodward says death often appeared in twelve hours. North also says that patients may die in the first twelve or twenty-four hours. Post-mortem showed nothing but intense congestion with cloudiness of the meninges. The terms ful-

minans, siderans, lightning-stroke, blight of the stars, aptly described its work in the community. It was and is the most mysterious of all diseases in its operations. But though the epidemic form has chiefly engaged the attention of writers on medicine, it is evident that in so-called sporadic cases, cerebrospinal meningitis is in this generation ever present with us. The twenty reports of the State Board of Health containing mortuary statistics record over one thousand deaths from the disease, averaging fifty per year. The reports of Massachusetts average one hundred and fifty per year pro population. While the other Counties of the State of Connecticut have had occasionally small epidemics in the past twenty years, Hartford County has had none, but nevertheless has registered every year a nearly constant average of nine deaths. About all of the cases therefore which are included in this County report are of the sporadic variety. This fact should add to the interest of this report, for little has been written about the sporadic form of the disease, and statistics and observations upon this form are considered desirable.

Cerebrospinal meningitis is one of the most fatal diseases we know of. Strümpell places the mortality rate of epidemics at from thirty to forty per cent. and Oppenheim at fifty-seven per cent. This is far beyond any of the acute infectious diseases amongst us. But the mortality rate of the sporadic form of the disease would appear to be much greater. Of the forty-two cases reported for this paper, thirty-one died; a mortality rate of nearly seventy-four per cent. Thus the sporadic form of the disease is nearly twice as fatal as the epidemic form.

Another marked difference in the two forms of the disease is in the relative age of the victims. Childhood and youth are the periods when cerebrospinal meningitis in both forms is most likely to occur. The earlier epidemics were most prevalent among children. In the more

recent epidemics the disease seems to select young adults. The epidemic form has frequently prevailed in our own and foreign armies. In the recent epidemic around Boston the decade of life between twenty and thirty showed the largest number of cases. Councilman says that epidemic cerebrospinal meningitis is exceedingly rare under one year, and denies the accuracy of diagnosis of the disease where a large percentage of fatal cases is put down as under one year. But the sporadic form of the disease certainly prevails at a much earlier period of life. In the present list of forty-two cases furnished by the most careful diagnostician among us, two occurred within the first year of life, fourteen in the first decade and only seven between twenty and thirty. Our State records present for the most part the mortality statistics of the sporadic form of the disease. In them at least twenty per cent. of cases fall within the first year of the disease and nearly fifty per cent. within the first decade. While there doubtless are many errors of diagnosis in the State statistics, making due allowance for all that, it is still evident that the sporadic form of the disease prevails frequently in the first year of life and par excellence in the first decade.

The environment has been considered a causal factor in the disease It is certainly so in the sporadic form. The replies to this question run somewhat as follows: (1) "all three cases in poor families not clean or sanitary"; (2) "extremely bad sanitary condition"; (3) "crowding and filth in both cases"; (4) "damp house in one case"; (5) "exceedingly filthy, dark and crowded in two cases." In more than one-fourth of the cases a bad environment is reported. This of course acts in two ways: First in favoring the presence and development of all kinds of bacteria and second in lowering the resistance of the individual. In a marked degree cerebrospinal meningitis in its sporadic form belongs to the list of filth diseases.

Epidemic cerebrospinal meningitis is considered in some degree contagious. Many cases of several members in one household having the disease are on record. Singer reported in an epidemic that eight members of one family died of the disease. That epidemics occur among troops on shipboard or in barracks would imply contagiousness. But the sporadic form appears to furnish no such evidence and the unanimous testimony of the reporters is that they have never seen any reason to suppose that the disease is contagious, and it is doubtless true that sporadic cases are practically uncommunicable to those in the immediate vicinity.

The sequelae of the two forms of the disease do not differ much. Those reported in the present list of cases were, one case of blindness, two of insanity, one of hydrocephalus, one of persistent headache, one of slow convalescence with temporarily impaired articulation. These include the usual list with the exception of deafness and deaf-mutism and temporary paralysis.

In only four of the present list of cases did other diseases coëxist. These are stated to be one of pneumonia, one of pleurisy, two of influneza. This fact shows that the present list of cases was practically wholly of the form of primary acute cerebrospinal meningitis, an idiopathic and not a secondary affection. Primary cerebrospinal meningitis is a disease caused by the presence and growth in the meninges of the brain of any one of several micro-organisms. These micro-organisms are most frequently the diplococcus intracellularis and the pneumococcus. The bacillus tuberculosis causes a meningitis which can hardly be considered primary and which forms a well-known class by itself. Cerebrospinal meningitis caused by the streptococcus, the staphylococcus, the Eberth or typhoid bacillus, the colon bacillus of the bacillus anthracis, is usually secondary to a development of the germ elsewhere in the body. Dr. Storrs for example

recently recited an interesting case of meningitis following an operation for appendicitis due probably to the colon bacillus. This has occurred elsewhere. So erysipelas, otitis media, alveolar abscess, malignant carbuncle, typhoid fever, may each be the starting point of a meningitis. But the pneumococcus and the diplococcus intracellularis of Weichselbaum appear to be able to find their way directly to the brain and start up a specific inflammation of the meninges. The pneumococcus or lanceolate bacillus has been regarded by many as the chief agent in producing epidemic cerebrospinal meningitis. Thus Mills in his comprehensive text-book of nervous diseases, published in 1898, says, "All recent investigators are agreed that the pneumococcus is the micro-organism most frequently present in epidemic cerebrospinal meningitis." I think however that Councilman, in his elaborate report of the State Board of Health of Massachusetts, 1898, abundantly proves that such is not the case but that the epidemic form of the disease is specifically related to the diplococcus intracellularis of Weichselbaum. Councilman gives the findings of twelve observers from Weichselbaum down and adds thirty-eight cases from the Boston epidemic, all showing in sections and in cultures the diplococcus intracellularis. The diplococcus intracellularis appears as two hemispheres separated by an unstained interval. It stains with any of the ordinary stains for bacteria. It occurs not infrequently in the form of tetrads. It grows feebly in cultures, frequently only a single colony developing in spite of extensive smears. In the tissues of the brain, lungs, etc., the diplococcus is almost strictly confined to the polynuclear leucocytes. It is obtainable from the cerebrospinal fluid by lumbar puncture, but puncture must be made quite early in the disease. Mixed infection with pneumococcus, staphylococcus, and streptococcus are not uncommon.

Councilman explains the prevailing bnt erroneons view that the pnenmococcus is the organism most freqnently associated with epidemic meningitis for the reasons that it was the first organism to be fonnd in the disease and that the first cases examined were cases secondary to pnenmonia and acute endocarditis. Furthermore it has been found in most of the sporadic cases of the disease which have been snbjected to bacteriological investigation.

Epidemic meningitis is a rare disease and in many parts of the world is not known, fnrthermore is less fatal to life. Weichselbaum's diplococcus is also rare—in fact is only seen to my knowledge in the lesions of meningitis and has relatively feeble growing powers. This parallelism makes it reasonable therefore to associate the two and to regard the diplococcus as the specific cause of the epidemic form of the disease. The pnenmococcus on the other hand is widespread and chiefly accompanies the sporadic forms of the disease, causing in the aggregate a vastly greater number of deaths evenly distribnted throngh the years. It usnally of course finds its resting place in the lungs or contiguous organs. Once in a thousand times perhaps, it gains access through the nose to the brain. There it is a far more ugly germ to deal with. Conncilman believes that such cases never recover. In fact he takes the ground that only cases infected by Weichselbaum's diplococcus may recover. If then, sporadic meningitis is largely caused by universally present pnenmococcus, it is exceedingly reasonable that infants under one year shonld be attacked as well as older people and there is less reason to doubt the accuracy of the mortality statistics which seem to agree, whether taken in Massachusetts, Connecticut or elsewhere.

It is believed however that Weichselbanm's diplococcus occurs in a certain proportion of the sporadic cases. Only one of the present list has a bacteriological history

and this goes to substantiate that view. A patient of the author, a young man of twenty-five with a pleuritic effusion of several months' duration undergoing absorption, was suddenly seized with severe headache to which was added in succession fever, delirium, muscular rigidity, deafness, dysarthria, inequality of pupils, strabismus, incontinence of sphincters and coma. Death occurred on the fourteenth day. Lumbar puncture was performed three times; the first time by Dr. McKnight, when three drams of cerebrospinal fluid escaped, some of which was allowed to flow over the surface of a culture-tube. In thirty-six hours only two colonies had developed, and examination of one of these showed Weichselbaum's diplococcus in tetrads in pure culture. Later staphylococcus pyogenes aureus was found in the culture showing a mixed infection. The bacteriological examination therefore enabled us to exclude a tubercular meningitis which the history of pleurisy might suggest, and on the other hand excluded a pneumococcus meningitis secondary to the pleurisy.

The diagnosis of cerebrospinal meningitis in typical cases is easy. If seen late in the disease it may be confounded with typhoid fever. Pneumonia, uremia, hysterical retraction of the head, cerebral abscess, all have similar symptoms but can be readily excluded. Secondary forms of the disease are usually easily distinguished. Perhaps the most important diagnostic symptoms of the primary form are, suddenness of attack, muscular stiffness, fever, vomiting, headache, delirium, irregularity of pulse and temperature, inequality of pupils, herpes, petecheal eruption, paralysis. But the surest method of diagnosis, which should become universal, is bacteriological examination by means of lumbar puncture. To do this, the patient should be on the side with the knees drawn up and the shoulder depressed. The aspirating needle, three or four inches long, should be boiled for ten

minutes and the back of the patient and hands of the physician should be sterilized. The needle is introduced between the third and fourth lumbar spines (the second and third in children) one half inch to one side of the median line and pushed a little inward and upward for about an inch and a half in children and two and one half or three inches in adults. The fluid is allowed to drop into a test-tube, whatever is necessary, and the wound sealed up. The needle can be withdrawn a little and thrust in any direction if the first attempt doesn't reach the canal.

The treatment of cerebrospinal meningitis is very unsatisfactory considering the mortality rates. In reply to our question as to the treatment adopted in cases that recurred, mention is made of bromides, aconite, ice-caps, venesection and iodide of potash. Dr. Parsons details very favorable experience with opium, given early and pushed to its physiological limits. Dr. Shepherd got his recoveries with the use of iodide and bromide of potassium and belladonna for pain. Dr. Bruce mentions a cure of the tubercular form with Koch's tuberculin. These measures are in accord with the recommendations of most writers. For my part, I look forward to the discovery of an antitoxin which will put a new face on the present gloomy prognosis. As the disease is sometimes a house-disease by way of prophylaxis, thorough disinfection is recommended and general antiseptics like soda salicylate, mercury, etc., might be given as preventives.

DECIMATION OF THE RACE BY TUBERCLE BACILLI.

E. P. Douglass, M.D.,

GROTON.

The year ending April 30, 1899, showed that as a result of our unpleasantness with Spain, we had lost 6,190 men from all causes; disease, bullets, accidents, etc., in Cuba, Porto Rico, and the Philippines. At such a tremendous sacrifice of human life, the whole country has been up in arms, the dailies have vied with each other to be the first to describe the terrible details of sickness and death; sweeping charges have been made by the public against the National Officers, from the highest to the lowest, rigid Courts of Inquiry have held continuous sessions for months, to unravel the great mystery of so many deaths, and to mete out punishment to those who have been criminally careless, or over zealous, and incidentally many thousands of dollars have been spent to prevent such a sacrifice in any future emergency.

As laudatory as these measures have been, the nation and the states seemed to almost have lost sight of the fact that there lurks in our country, our homes, our places of business and pleasure, and maybe our food we eat, water we drink, and air we breathe, a foe more deadly than the sword of all ages—one that is capable of attacking every organ and tissue of the body, a foe that is ever seeking our most vulnerable point, and never giving quarter, the Tubercle Bacillus. Although our arch enemy is only 1-6000 of an inch in length, yet, by its multiplication capable of decimating the population at the rate of 150,000 annually, or in thirty-one years capable of vanquishing a population that would equal

all the New England States, and in one hundred years, the New England States, New York, and Pennsylvania, or less than four hundred and fifty years to slaughter the 75,000,000 of people of the United States; and as we now believe from a preventable cause. An average of about one seventh of all deaths, of whatever nature, are produced by this deadly germ, about three times as fatal as all other contagious diseases combined.

Connecticut contributes about 1,400 deaths annually, and has for the past ten years. New York furnishes from one tenth to one twelfth of the estimated mortality. From the time of Hippocrates, 400 B. C., till 1882, the real cause of Tuberculosis had never been positively demonstrated, yet the theory of hereditary transmission seemed the most in favor, while some of the more enlightened and advanced in thought, like Villemin, almost grasped the great truth. But it took advanced bacteriological research and experimentation by Koch, in 1882, to fully demonstrate to the profession that the Tubercle Bacillus was the only direct cause of this terrible malady, and could be shown in every form of the disease and in every organ and tissue involved; that all other attributed causes, as heredity, predisposition, taking cold, etc., were only assistants in producing a fertile soil for the development of the germ.

Facts have accumulated and multiplied in the past seventeen years, from many competent observers, who are one with Koch, so there can no longer exist a reasonable doubt in the minds of ninety-nine out of every hundred physicians, that the true cause of Tuberculosis has been unearthed; yet the slowness to act on this fact can be shown by the New York Medical Record, first reporting Tuberculosis under the head of "Contagious Diseases," June 16, 1894, twelve years after Koch's memorable report and after from 140,000 to 150,000 had been laid away from this infection in New York alone.

The fact that Tuberculosis claims for its victims three times the number of all contagious diseases combined, leads one to think that first, it must be under but little sanitary restraint, and secondly, that the life of the bacilli and spores have greater latent tenacity than any other.

As the disease is better known from its germ life, the sources of infection grow to be legion. The one great source of contagion is the sputa of the phthisical patient and almost all the other sources of infection are really carriers of the Tubercle Bacilli from sputa in its dried state. Nuttall estimated that a patient well advanced in Tuberculosis of the lung, would expectorate one and a half billion tubercle bacilli in twenty-four hours, and Prof. Bollinger states that a low estimate of only a moderately advanced case of consumption would be from thirty to forty millions in twenty-four hours; that he has found from 810,000 to 960,000 in one cubic centimetre of sputum (about $\frac{1}{4}$ dram). It is highly probable that, were it not for the bactericidal qualities of the blood, and the natural resistance of the different organs and tissues to infection, the Tubercle Bacilli would multiply as rapidly inside the body as some harmless germs do on the outside of the body. Prof. Buchnu of Germany, found that by the process of division and subdivision, one germ becomes two in fifteen minutes, and estimated at the same rate, a single microbe, in twenty-four hours could produce a million, million, million times the population of the whole earth; Prof. Law, that a single bacterium dividing and rediviling, would produce 281,500,000,000 in twenty-four hours, which in bulk would fill a one-half pint measure although the original bacterium was only 1-150,000 of an inch in diameter.

No doubt exists that to-day Tuberculous sputa, so promiscuously cast about, is the greatest enemy the human race has. Obviously, every building, where large gather-

ings frequent, becomes a source of danger, unless precautions are used, for where can a large gathering be found which some consumptive does not frequent? The theaters, churches, school-rooms with vitiated air, and packed to the doors, our homes, where consumptives live, the mill, the office, the sleeping car, hotels, and cottages, in all health resorts, where the consumptives congregate, and even the public telephone, the drinking cup, and the blowing instruments, may become sources of infection.

Through the kindness of Dr. Rush Kimball, of Norwich, I would like to report the following, illustrating the contagiousness of Tuberculosis: A. E., aged twelve years, had La Grippe with Bronchitis, and in a short time developed Phthisis Pulmonalis—was sick in all, about one year, and died. Several months before his death, a sister, C. E., aged ten years, showed consolidation at the apex and high temperature, and cough; gradually wasted and died several months after the brother. A short time before the sister's death, F. E., aged six years, another sister, developed a cough, temperature, and local signs of incipient Tuberculosis. She was at once removed from her home to another not far distant, lived an outdoor life with plenty of good milk and in six months recovered, and now, after three years, seems perfectly well. No Tuberculous family history on either side.

Also through courtesy of Dr. George H. Jennings, of Jewett City, would like to report the summary of the following remarkable cases, coming under the doctor's observation.

Out of a family of twenty-two, eighteen have died of Tuberculosis in the past twenty-three years, beginning with father, then one by one till only three of the children and mother are left, and of these, two daughters are now suffering from the disease, leaving but one child, a son, who seems well.

Have occupied four tenements during the time and in the last one three daughters have already died.

Milk, we may fairly judge from reports and experiments, has been the means by which many infants and adults, as well, have become infected.

Kanthock and Staden reported in "Lancet," February 14, 1899, page 75, results of experiments of the different milk supplies furnished to the Colleges at Cambridge.

In the experimental laboratory six guinea-pigs were used daily, two being inoculated on two successive days with each sample of milk. It was found that out of ninety animals inoculated, twenty-three died of Tuberculosis, 25.55%. Of these twenty-three, thirteen were inoculated with creamery layer, ten with the sediment. Of sixteen dairies examined, nine caused the disease. Have we any good reason to suppose our general milk supply contains any less tubercle bacilli?

In the "Proceedings of the Connecticut Medical Society," 1896, page 129, the writer reported that a herd of five cows became infected by keeping a neighbor's heifer for the winter. Four out of five reacted from Tuberculin and were killed. The fifth was spared, but later developments showed she also became infected in interval from test till the slaughter. Some months later, I was called to attend a child in the same house, and found it a hopeless case of Tubercular Meningitis and on inquiry, found it had been fed on milk from this cow which later showed pronounced signs of the disease, and was killed. Milk is also one of the great factors in producing intestinal and mesenteric Tuberculosis, as proven by Gerlach, Zinn, and Klebs, who demonstrated that Peyer's patches, lymph follicles, as well as the mesenteric glands, furnished most favorable soil for the localization and growth of the Tubercle Bacilli. Same deductions resulted from experiments of Malin, Bonley, and Parrot, who found that animals died of In-

testinal Tuberculosis, which were fed on tuberculous sputa, milk, and meat.

Butter, cream, cheese, and beef, are also means by which the germ enters the body, and danger must lurk in all food prepared by the consumptive. Dr. Baldwin, in his Adirondack Sanitorium, has demonstrated that cultures could be produced from his patients' nails, who used a cloth to collect the sputa, even when the hands were frequently bathed, and that inoculated in the guinea pig, would produce the disease, but when great care was exercised to always use the sputa cup, with frequent cleansing the hands, rarely could the cultures be produced. Dinne reports a very interesting case, in which a trained nurse suffering from Lupus, infected the food of the children she had charge of, and gave them well marked cases of Tuberculosis.

Houses, barns, slaughter houses, creameries, and bakeries, need to have a more prominent place as a means of contagion. What physician has not seen or known of whole families decimated, one after the other, in the same house?

I knew of a family of seven in Groton, several years ago, when Tuberculosis was considered a purely hereditary disease, where one after another was stricken and died, till only the seventh remained, and he was quite well advanced in Phthisis Pulmonalis, but left the house and went to a warmer climate and is still alive and quite well, after an interval of about eighteen to twenty years.

Barns afford a possible means of infection where a large herd of Tuberculous cattle have been confined during the winter. If not of much danger to men, it certainly would be a menace to a new herd of cattle.

Creameries might become infected by Tuberculous milk, or by careless Tubercular workmen.

Bakery supplies are another possible means of contagion by Tubercular attendants.

Pets, I believe to be a source of contagion to children, as cats, birds, and fowls.

Last October I had a strong, vigorous, Vermont cat sent to my home—one whose family history was beyond question—and in January noticed that her fur became lustreless and, instead of hunting, she wished to keep near the heater. Soon a persistent cough developed and, after examination, was convinced that the cat had Tuberculosis of the lungs, so thought I would watch her to find the cause, which revealed the fact that she was the boon companion of a cat well advanced in the disease.

Canaries frequently have Tuberculosis, more commonly of the lung and intestine. Knew of a case recently that had both Tuberculosis of lungs and mesentery, and this becomes a possible means of infection to the attendant.

Infection by insects, while it lacks many points of absolute proof, yet would seem reasonable. Experiments of Madden and Simonds were the first to furnish evidence on this point. They fed flies with Cholera Spirilla, and obtained cultures of the bacteria so fed. Sawtchenk has shown that, not only are bacteria taken into the fly, but that they multiply during their sojourn. Very numerous colonies were obtained as late as the third day after feeding. Yersin found the bacillus of Bubonic Plague in flies infecting his laboratory. Very little seems to be known of the inner working of the fly but Prof. Packard says that Musca Domesticus' speed is 5.35 metres a second, or about ten miles an hour, and could scent their food for several miles, traveling with the wind twenty to thirty miles a day.

This seems to be a very possible means of infection, as flies are so frequently in the sick room and could easily carry the bacilli, or spores, from sputa to milk, water, or food, and possibly over miles of territory.

As all must take into their system countless millions

of the Tubercle Bacilli during their lifetime, and are not conscious of the disease in any form, but live to a good old age, and die of some disease other than Tuberculosis, and so many autopsies show spontaneous cures, it necessarily follows that there must reside, somewhere in the citadel of our complex anatomy, a watchman that either kills or renders inert, the pathological effects of the germ.

Dr. J. Hewes Bennett, in his "Clinical Lecture on Medicine," page 680, says that the spontaneous arrest of tubercles in their early stages, occurs in the proportion of one-third to one-half of all individuals, who die after the age of forty, and Paget and Bondet, from observations in Saltpatriere Hospital, Paris, found that some lesions might be discovered in from one-half to four-fifth of all deaths over seventy. Whether the power of resistance of the system resides in Phagocytosis of Mitchinkoff, or in the blood serum, as claimed by Nuttall, and Prudden, Humoral theory of Buchner, or Defensive Proteids by Hankin, or Antitoxin theory of Behring, Kitasato, and Vallard, which has been applicable to Diphtheria and Tetanus, will take the great future to decide. As to meeting the great problem which has failed all ages, will only touch upon Prevention which should be our great aim, if we are fully convinced that this is a purely infections disease. First, physicians should be thoroughly alive to the fact that Tuberculosis is a preventable disease, that in all cases coming under their supervision, strict precautions should be taken to prevent its wide spread ravages, by insisting on the patient using a metal sputa cup, which with contents can be thoroughly boiled. The dejecta of Intestinal Tuberculosis should be thoroughly disinfected and the patient kept scrupuously clean, in short, using all precautions as in any highly contagious disease. Through all existing channels of information, the public should be

educated as to the means of contagion, and taught how to avoid the tubercle.

As Tuberculosis has become the National disease, and widely disseminated, strict quarantine should be maintained against the foreign importation of more Tubercle Bacilli. Large National appropriations should be made to maintain a bureau of Contagious Diseases, and National experts on the disease should be employed to prosecute a warfare against this great decimator of the human race, and each State should co-operate in legislation and appropriation to carry out the laws. All abattoirs, creameries, and dairies, should be under State or National supervision, and all places of public gatherings should be regularly disinfected, and I venture to say that the total cost would be infinitesimal compared to the expense of so many funerals and care during fatal illness. State sanitoriums should be erected to care for those well advanced in the disease, who could not be properly cared for at home. All weakness of constitution should be guarded against, excesses of all kinds, exhaustion from over work of mind and body, the general system kept in the best possible condition, to fight the inroads of the enemy. All Catarrhal affections should have prompt and proper treatment, such as those of nose, throat, tonsils, larynx, etc.

As soon as the whole country can be stirred up to the fact that thousands upon thousands of lives are being annually sacrificed from a preventable cause, then, time, money, and ability will not be wanting to devise and carry out methods that will eventually reduce the death rate to, at least, that of Scarlet Fever, and Diphtheria, and I am confidently looking forward to the day when we shall have just as sure a specific for Tuberculosis as we now have for Diphtheria. As yet, plenty of pure, outside air, with good, wholesome food, and good habits, are the best prevention as well as cure.

NORMAL BREATHING IN THE TREATMENT AND PREVENTION OF TUBERCULOSIS.

GEORGE J. HOLMES, M.D.,

NEW BRITAIN.

The function of respiration consists in the process by which oxygen penetrates the substance of living organisms, together with the changes which accompany and follow its introduction.—DALTON.

The process of respiration takes place very actively in mammalians and birds and much less rapidly in reptiles and fishes. The respiratory apparatus in each, consists of a moist and permeable animal membrane, termed the respiratory membrane with blood-vessels on one side of it and air or an aerated fluid on the other.

The blood and the air do not come in direct contact with each other, but absorption and exhalation take place through the respiratory membrane which lies between.

In most aquatic animals the respiratory organs have the form of gills or bronchiae, consisting of mucous membrane, with an abundant supply of blood-vessels which hang out freely into the surrounding water.

In terrestrial and air-breathing animals, the respiratory apparatus is situated internally, and in man, commences with the larynx, which communicates with the pharynx at the upper part of the neck and with the lungs through the trachea.

The organs of respiration in man consist of the larynx, trachea, and lungs, and to these the nasal passages must be added to secure normal physiological breathing.

The larynx is composed of fine cartilages united together by ligaments and muscles and contains the vocal cords, which are formed by folds of the lining mucous membrane. The vocal cords open and close automati-

cally,—open to admit of the free passage of air to and from the lungs, and close to shut out dust or noxious gases. The larynx stands guard over the entrance to the lungs and admits nothing but air without irritation, and only this when properly prepared by passing through the nose, where it becomes filtered, moistened, and warmed nearly to the temperature of the blood, so that diffusion can take place more readily in the lungs.

The trachea is a tube five inches long and three quarters of an inch in diameter, and at the lower part divides into the right and left bronchi. It is covered externally by tough, fibroelastic membrane, and internally by mucous membrane, lined by columnar ciliated epithelial cells. The ciliae are always moving from within outward. Where the two bronchi enter the lungs they divide and then sub-divide into numerous and smaller branches, which penetrate the lungs in every direction until they finally terminate in the pulmonary lobules.

As the bronchial tubes become smaller their walls become thinner, and when the tube becomes less than the one-fiftieth of an inch in diameter, they wholly disappear, and the fibrous and mucous coats blend together, forming a delicate, mucous membrane, with circular, muscular fibres. The ultimate end of the bronchial tubes contains the air vesicles or cells. The walls of these air vesicles are exceedingly thin and delicate, and are lined internally by a layer of tessellated epithelium and covered externally by elastic fibres, which give the lungs their elasticity and distensibility. Owing to the elastic tissue which is presented in the lungs, they are very readily distensible, so much so, indeed, that the presence of the air inside of the trachea and lungs is sufficient to distend them until they completely fill all parts of the thoracic cavity not occupied by the heart and great vessels. The elastic tissue endows them not only with distensibility, but also with the power of elastic recoil, by

which they are enabled to accommodate themselves to all variations in the size of the thoracic cavity.

The movements of respiration are two, and consist of an alternate dilatation and contraction of the chest, known as inspiration and expiration.

1. Inspiration is an active process, the result of the expansion of the thorax, whereby air is introduced into the lungs.

2. Expiration is a partially passive process, the result of the recoil of the elastic walls of the thorax, and the recoil of the elastic tissue of the lungs, whereby the carbonic acid is expelled.

The respiratory movements vary according to age, sleep, and exercise, being most frequent in early life, but averaging twenty per minute in adult life. They are diminished by sleep and increased by exercise. There are about four pulsations of the heart to each respiratory act.

The appropriation of the oxygen and the evolution of carbonic acid takes place in the tissues as a part of the general nutritive process, the blood and respiratory apparatus constituting the media by means of which the interchange of gases is accomplished.

The breathing volume of air, or that which passes in and out of the lungs at each inspiration, is estimated at from twenty to thirty cubic inches.

The complemental air is that amount which can be taken into the lungs by a forced inspiration, in addition to the ordinary breathing volume, and amounts to about one hundred and ten cubic inches.

The reserve air is that which usually remains in the chest after the ordinary efforts of expiration, but which can be expelled by forcible expiration. The volume of reserve air is about one hundred cubic inches.

The residual air is that portion which remains in the

chest and cannot be expelled after the most forcible expiratory efforts, and which amounts, according to Dr. Hutchinson, to about one hundred cubic inches.

The vital capacity of the chest indicates the amount of air that can be forcibly expelled from the lungs after the deepest possible inspiration, and is an index of an individual's power of breathing in disease and prolonged severe exercise.

The combined amounts of the breathing volume, the complemental and reserve air, two hundred and thirty cubic inches, represents the vital capacity of an individual of five feet seven inches in height. The vital capacity varies chiefly with stature. It is increased eight cubic inches for every inch in height above this standard, and diminished eight cubic inches for every inch below it.

The breathing volume of air is carried only into the trachea and larger bronchial tubes by the inspiratory movements, and reaches deeper portions of the lungs in obedience to the law of diffusion of gases.

The ciliary action of the columnar cells lining the bronchial tubes also assists in the interchange of air and carbonic acid.

The entire volume of air passing in and out of the thorax in twenty-four hours is subject to great variation, but can be readily estimated from breathing, the volume and the number of respirations per minute. Assuming that an individual takes into the chest twenty cubic inches at each inspiration, and breathes eighteen times per minute in twenty-four hours, there would pass in and out of the lungs three hundred cubic feet.

Assuming that one inch of oxygen remains in the lungs at each respiration, in twenty-four hours there would be fifteen cubic feet consumed, weighing eighteen ounces. To obtain this quantity of oxygen, three hundred cubic feet of air is necessary. The amount of watery vapor which passes out of the body with the expired air in

twenty-four hours, is estimated at from one to two pounds.

Inspired air undergoes a change in composition during its stay in the lungs which renders it unfit for further use.

MacDonald has proven by experiment that the physiological functions of the nose so far as its respiratory duties are involved are as follows:

First—However low the atmospheric temperature, the air is raised almost if not quite to the temperature of the blood on passing through the nose alone and before reaching the pharynx.

Second—However dry the external air may be on passing through the nose, it is completely saturated with moisture.

Third—Gaseous exchange takes place in the nose between the gases of the blood and those of the air. Moreover the quantity of carbonic acid exhaled by the nasal mucous membrane is to a certain extent proportionate to the number of degrees in temperature to which the air is raised. The increased supply of heat is probably from the augmented blood-supply, to the mucous membrane lining the nasal fossae and esspecially the inferior turbinated bodies.

It is the opinion of a number of noted Laryngologists, who have made a study of the upper air-passages, that stenosis of the nasal respiratory tract, either from hypertrophy of the turbinated body, deflection and thickening of the septum, or post-nasal adenoids, results in an over accumulation of carbon dioxide in the blood.

It is now accepted as a physiological fact, that the functions of the respiratory tract of the nose, are to warm, moisten and filter the inspired air, and when a patient is compelled to breathe through the mouth, the air is thereby deprived of the warmth, moisture and

cleansing it should receive by passing through the nose, and in the case of the mouth breather, the air abstracts moisture from the pharynx, trachea, bronchi and air vesicles, instead of depositing it there as nature intended. An irritation is thus excited in the air vesicles of the lungs, the epithelial lining is swollen, and in some cases is several layers in thickness, whereas it is normally but one layer in thickness. Because of thickening epithelial lining, the proper interchange of gases is retarded and the blood is not sufficiently oxygenated, to meet the requirements of metabolism. Carbon dioxide on the other hand accumulates in the blood and this gas is a violent poison to the white blood-corpuscles. The white blood-corpuscle has two functions: First—as germicidal agent, and Second—as scavenger—absorbing and conveying away the broken-down products resulting from the change in cell-tissue, to the excretory organs for elimination from the system. Thus we can see that serious functional and even organic derangements may occur by lowering the germicidal power of the leucocytes and lessening this power to eliminate waste products.

The red blood-corpuscles are the oxygen carriers into the system, and the quality of the blood is quickly impaired when the amount of oxygen is insufficient for nutrition.

I have many cases on record where the patient complained of a general run-down condition, and the appearance was one of anemia, the face pale, the nose pinched, and where complete relief has followed the operative procedure for restoring the normal nasal breathing function, in fact this is a familiar picture to the rhinologist.

Sanitary authorities and bacteriologists as well as clinicians have held for some time that the transmission of pulmonary tuberculosis is by means of the sputum,

which becoming dried after expectoration, circulates as dust.

At the discussion of a paper before the Paris Academy of Medicine on "The Pathogenic Role of Dust," recently, it was stated that the floors are a fruitful and dangerous source of infection of many of the infectious maladies, and above all that tuberculosis almost always arises from germs preserved in dust, except where direct infection takes place.

In an article by Dr. Edmond Otis, printed in the American Journal of Medical Sciences, he says that congenital tuberculosis is so rare that it may be disregarded, and that the chief mode of conveyance of the tubercle bacillus is through the dried sputum, although the milk and meat of tuberculous food animals may be a source of infection, when not well cooked.

There are two primary and essential conditions which are necessary for the contraction of consumption:—The presence of the germs and a favorable soil.

Every person of imperfect muscular development and deficient respiratory capacity is a possible candidate for the bacillus.

Descendants of tuberculous parents are frequently born with a lower vitality, poor physical development, and lack of vigor, and so the power of resistance to disease is diminished. In these cases the patient should, from early life, be under instruction. Hypertrophied tonsils and adenoid growths should be removed, the nasal passages should be clear, in fact the patient should be referred to a competent specialist, and when the passages are made normal the patient should then practice deep breathing. The habit of taking a cold sponge bath in the early morning is most useful, but should be very light at first.

The dwelling should be constructed so that abundance

of sun and light can enter. Ventilation should be thorough and constant all the time, day and night. Woolen clothing should be worn, but not too heavy. Night air is not only not injurious but is often purer than day air. Many occupations predispose to tuberculosis, and factories as well as schools should be under medical inspection.

F. R. Walters sums up the benefits of climatic treatment of phthisis in The Lancet, as follows:—

He finds that the active inflammatory cases may be treated at home in any climate, and that the advanced and incurable ones are not to be sent away from home and friends.

First—The air should be pure and free from the results of decaying organic matter and from impurities coexisting with a populous district.

Second—The atmosphere must be free from dust and smoke; even the dry dust of the open country is baneful to consumptives. The locality must be near large grass lands or a sheet of clear water.

Third—The atmosphere must be fresh and bracing. In high altitudes the dryness of the air makes it more bracing, while the mornings and evenings are more refreshing.

Temperature is of minor importance provided the low temperature is accompanied by dry air free from winds, and a higher temperature is always dry and breezy.

The robust will do the best in the former locality, the delicate in the latter. An equable climate is not needful as long as the barometric conditions are as above. A warm, dry soil is essential, with natural drainage for sub-soil water and sewerage as sand, gravel or sloping rock soil. Altitude is of benefit so far as it causes expansion of sound lung tissue.

I stepped from the train recently upon its arrival in

Denver and commenced to walk briskly as I would walk in Hartford. Soon a sense of oppression was felt in the lungs and the chest began heaving full and free. I slackened my pace and after walking a few steps slowly, the breathing became normal but very deep, and a sense of great relief followed. The lungs had adjusted themselves to the rarer atmosphere of Denver at an altitude of one mile above the sea, by expanding to their fullest capacity. At the top of Pike's Peak, at an altitude of 14,149 feet above the level of the sea, I found that respiration although full and deep did not satisfy and there was a sense of distress and oppression and general weakness upon exertion.

It is an established fact that most patients affected with laryngeal phthisis die of pulmonary phthsis. It is also a fact that a large proportion of temporarily cured cases are threatened with recurrence, although cases have been observed where the complete cure has lasted five years.

The dysphagia, dysphonia and sometimes dyspnea attending these distressing cases can be relieved by surgical operation, and they should be referred to the laryngologist for surgical treatment.

OTITIC TUBERCULOSIS.

Milligan says that Tuberculous affections of the mucous membrane of the middle ear and of the adjoining mastoid cells, are probably of much more frequent occurrence than is usually supposed to be the case.

The onset of the disease is insidious and its subsequent course is asthenic.

The sudden appearance of a purulent discharge from the ear, unaccompanied by pain or any of the usual symptoms of an acute asthenic inflammation, and the occurrence of a perforation covered by creamy secretion in the center of the pale edematous and uninflamed membranum tympani, should always excite suspicion. Early enlarge-

ment of the sub-mastoid cervical glands, and the early appearance of facial paralysis must also be regarded as important indications of what is probably a tubercular lesion.

The diagnosis of tubercular otitis, by the inoculation of a guinea-pig or rabbit, with material taken from the suspected middle ear or mastoid processes, can be definitely established in from two to four weeks.

To treat such cases successfully, ample room should be afforded for free drainage. This in most cases would necessitate the opening up of the mastoid cells and antrum and to establish a free communication with the cavity of the middle ear.

In summing up the treatment of Pulmonary Tuberculosis, it may be said: that if there is obstruction in the nasal passages these obstructions should be removed so that the patient can receive the normal amount of air through the normal channels.

In certain cases a suitable climate should be advised where the lungs can get the exercise required for the system by their deeper breathing.

Rest, good food and medicines as symptoms may require, but largely in the nature of tonics, are indicated. Rest applies to cases having a temperature of over 99½° in the afternoon and rest should be continued until the temperature stays continually below that point for ten weeks. The important point in altitude and especially in that of Denver is the fact that a weak patient can get his exercise by sitting down and the deep breathing will do the rest.

If a medical adviser sends a phthisical case away for climatic treatment he should recommend the patient to a reputable physician in the locality where the patient goes. It is a mistake to attempt to follow a patient when he goes away for he needs the same careful medical advice and attention there as at home.

THE DIFFERENTIAL DIAGNOSIS OF CARDIO-VESICULAR MURMURS.

E. K. Root, M.D.,

HARTFORD.

By cardio-vesicular murmurs I mean a certain form of functioual heart-murmurs of a variety frequently met with, as I believe, by life insurance examiners, but more often overlooked or misinterpreted by physicians examining patients ill with some disease.

This is a systolic apex murmur heard with most intensity at or in the immediate vicinity of the apex, heard somewhat along the cardiac border, heard less frequently at the base, and still more rarely heard behind. Its character varies from that of a soft, breezy, blowing murmur to oue closely simulating a well-defined friction sound, but is peculiar from the fact that it is altered in intensity by inspiration or expiration; that it may be completely obliterated by either forced inspiration or expiration, or by suspending expiratiou entirely for the moment. It is completely synchronous with the contraction of the heart and not with the respiratory act. It is not heard during the cardiac diastole. This murmur is sometimes heard with greatest intensity in the recumbent position, and disappears on standing. Others are only heard standing or leaning forward, and disappear in the prone position. The size and position of the heart is normal in all cases of uncomplicated murmur of the variety of which I am speaking.

The cause of this abnormal heart-sound is not clear. None of the authorities do more than refer somewhat casually to accidental murmurs, as they call them, and only one or two authors that I have been able to find

mention definitely the heart-murmur corresponding to the variety I am discussing and consider its causation.

In the British Medical Journal for November 29, 1890, is an article by Dr. J. S. Bristowe, F. R. S., senior physician to St. Thomas' Hospital, discussing this and other abnormal heart-sounds in which this occurs: "It is well known, or at any rate largely believed, that some murmurs generally termed cardiac are of no cardiac significance. So called hemic murmurs are common at the base of the heart. Of these I do not propose to speak. But at the apex it is not unusual to hear systolic murmurs, which there is also just reason to believe are not organic. The murmurs to which I here refer correspond to ordinary mitral systolic murmurs in the fact that they are best heard at the extreme apex of the heart, but they differ from them in the fact that they occupy a much restricted area, that they are not conducted in to the axilla or to the back, that they are considerably modified by the acts of respiration, and that there is no necessary evidence of enlargement or dilatation of the heart or accentuation of the second sound in the pulmonic area. I believe them to be caused in the same way that the 'Bruit de pot felé' is caused, only the contraction of the lung to which they are due is affected by the impulse of the apex-beat and not by the fingers of the physician. Such murmurs are largely influenced by respiration and not uncommonly by the pressure of the stethoscope. As to their relation to the respiratory acts, I believe they are generally intensified during expiration and inspiration, and especially during the latter, and that they often disappear absolutely at the end of expiration, and that other things being equal they are unusually increased by a firm pressure of the stethoscope.

"I may, in confirmation of the view that these murmurs are due to the cause above specified, say that I have occasionally noticed in cases in which the breath

is wavy over the upper part of the left lung, that during inspiration the wavy character along the edge of the heart has been replaced by an obvious though slight murmur resembling the murmur more frequently and better heard at the end of the apex. The last phenomenon is the production of a definite murmur by the actual squeezing of the air out of a limited portion of lung by the impulse of the heart against it. This, as I have remarked, may be occasionally feebly heard along the edges of the precordial area of dullness, replacing mainly during inspiration the simple rhythmical sound of the respiratory act, but it is always best heard at or near the apex of the heart, simulating the cardiac systolic murmur. The main factor is the sudden compression of the lung tissue by a blow suddenly inflicted upon it, and the production thereby of a murmur due to the escape of air from the tissues into and along the bronchial tube."

Sansom in his "Diagnosis of Diseases of the Heart and Thoracic Aorta," page 318, states that in differentiating a murmur in the mitral area due to an extra-cardiac from that due to an intra-cardiac cause, "In the sound as of a murmur due to the impact of the apex of the heart against the alveoli of the lung, the difficulties of differentiation may be much greater. Such murmurs are to be heard just over the heart's apex, not conducted in the paths of an intra-cardiac mitral murmur, but as the latter may be also thus localized, we must consider their other characters. They are much influenced by the respiratory movements, easily intensified both during expiration and inspiration, especially during the latter, and they often disappear at the end of an expiration. If, therefore, a rhythmical crescendo or diminuendo are observed during the respiratory acts, it is very probable that the murmur is not due to organic valvular causes. The cause of the sound is the pressure of the ventricle during its systole upon the neighboring aveoli of the

lung, whereby the air is squeezed out of them, and thus, as it were, an audible puff is produced."

I have had occasion in corresponding with our examiners in various parts of the country, relative to life insurance risks, to bring this question up, and it would be interesting if space permitted to quote the various opinions of some of the ablest diagnosticians in the country regarding these anomalous sounds. They are far more common than one would suspect considering how little literature there is about them. And their importance is considerable when one reflects how often and how easily they may be mistaken for organic valvular murmurs, and a bad prognosis given accordingly.

In considering the differential diagnosis of these murmurs we will confine ourselves entirely to a systolic apex murmur, as these sounds are seldom heard at the base, and so rarely heard behind as to practically leave them out of consideration. They are liable to be mistaken then,

First, for a mitral regurgitant murmur, due to insufficiency of the mitral valves:

Second, for tricuspid insufficiency:

Third, for pericardial or pleurocardial friction sounds:

Fourth, for true hemic murmurs due to chlorosis, anemia, etc.

A study of the point of greatest intensity of the murmur, the paths of conduction of the sound, and the condition of the right auricle should throw out a tricuspid lesion. Moreover, a lesion of this valve sufficient to cause a murmur that has existed any time, will be followed by a compensatory hypertrophy of the right ventricle with its resulting change in the area of cardiac dullness and lifting of the apex. In mitral lesion it may be questioned whether a permanent mitral lesion, due to insufficiency of the valve, can ever occur that is not followed by

hypertrophy of the ventricle or dilatation of the left chamber of the heart. It is true that in certain forms of blood-diseases, and in certain nervous conditions, many observers believe that owing to unequal tension of the papillary muscles of the chordae tendineae an actual insufficiency or leakage of the valve may occur without pre-existing endocarditis or permanent structural alterations of the valve itself. Be that as it may, it is but a temporary condition and is never followed by either dilation or hypertrophy of the left ventricle, which condition does invariably follow actual permanent structural defects of the valve.

The murmur of mitral regurgitation is heard throughout the cardiac systole; neither its intensity nor its tone-quality is influenced by expiration or inspiration. A cardiovesicular murmur is likewise heard during the cardiac systole, but its intensity rises and falls or disappears entirely during inspiration and expiration. A mitral murmur cannot be extinguished by requesting the patient to hold his breath, while the cardiovesicular murmur can be completely obliterated by holding the chest either in a position of forced inspiration, forced expiration or simply arresting respiration. If a true mitral lesion exists, careful percussion of all the cardiac area and search for the point of impact of the apex against the chest-wall will show a greater or less degree of enlargement of the heart, with the apex pushed to the left and downard. Moreover, in actual mitral lesion accentuation of the second sound of the heart over the pulmonic area is the rule. From anemia, chlorosis and other conditions dependent upon changes in the blood, the objective symptoms of anemia are usually sufficient easily to decide the question; if not, the examination of the blood and the count of the corpuscles should settle the question.

From pericarditis, from pleuritis resulting in actual

friction sounds due to a roughened condition of the pleura or pericardium, the differentiation is difficult, for the murmur may assume the crescendo or diminuendo character during inspiration and expiration of the cardiovesicular murmur, but the subjective symptoms of pain, fever, later of the exudate from the pericardial or pleural sac will assist in the diagnosis.

A friction murmur of the apex without inflammatory or other morbid change of the pericardium is occasionally heard when the stomach is fully dilated with gas, or after a heavy meal, the upward pressure of the distended organ against the diaphragm being the apparent cause of the friction sound. I have heard this in several instances in active, powerfully built men who are examined shortly after a heavy meal. There was an unquestioned rasping or grazing friction sound heard at the apex, and which I was unable to account for until subsequent examination a few hours later, after the stomach had emptied itself, showed the true character of the phenomena. It is evidently due to the upward pressure of the distended organ pushing the diaphragm and walls of the pericardium upward and impinging on the heart during the cardiac revolution.

Concerning the cause of this peculiar sound I am inclined to believe that the explanation of Professor Bristowe is the true one, namely the thrust of the heart's apex against the overlapping portion of the lung expels the air suddenly from the vesicles and produces an audible whiff or murmur. I am free to admit that this does not explain accurately all the peculiarities of the murmur in question, but I am also of the opinion that a friction sound at the apex due to some slight change in the position of the organ, to a distended stomach, or to individual peculiarities, is perfectly compatible with a healthy pericardium and pleura. In other words, it becomes necessary when examining the heart and having

discovered a murmur at the apex, systolic in character, to exclude all valvular changes as the cause for the sound before assuming that the murmur in question can be either cardiovesicular or friction.

Having satisfied one's self that the heart is not dilated or hypertrophied, that the pulmonic second sound is not accentuated and that the condition of the blood as shown in the color, build, physique, general appearance of the patient, will in all probability exclude all hemic blood-murmurs, we must then assume that the cause of the sound is without the cavity of the heart. By holding the breath, by varying the position and by satisfying ourselves that the sound does not vary in character during inspiration and expiration, that it has none of the crescendo and diminuendo character of which Bristowe speaks, we can then exclude a sound produced in the air vesicles of the lung, for with the lung fully expanded and the glottis closed the escape of air from the vesicle on percussion of the heart muscle is prevented. This leaves us the simple, grazing friction sound of the apex which we must establish by percussing the stomach, noting whether it is filled with gas or fluid, and by placing the individual in the prone, sitting, standing or leaning forward positions and noting the varying effects of the change of position upon the sound itself. The friction sound heard with the patient sitting will usually disappear on his assuming the recumbent position.

If, in spite of all these tests, a murmur is still heard, and yet evidence goes to show that a true valvular lesion is improbable, we are justified, in my belief, in assuming that from nervous causes, from excitement during examination, from some unknown factor controlling the vasomotor apparatus, we may have to deal with a functional leak of the mitral valve due to unequal tension of the valve leaflets, or to undue or unequal inervation of the fibromuscular ring of the valve itself. Such murmurs I

have occasionally differentiated by having the patient lie prone on his back with both hands lifted in the air and holding a heavy book to bring some strain upon the muscular apparatus, or an occasional few minutes' exercise by walking rapidly around the room, will so restore muscular tone that the valve lips close firmly and the sound disappears.

THE TREATMENT OF PERTUSSIS.

W. H. Donaldson, M.D.,

FAIRFIELD.

Pertussis is one of those diseases,—happily few in number,—which have thus far baffled the efforts of our profession to either understand or cure.

It is one of those few communicable diseases to which childhood is heir and which the average parent considers inevitable for his offspring to have,—and the sooner the better.

Happily the teachings of an enlightened profession are making the laity to appreciate the fact that no disease is inevitable, but that all are avoidable. We fail as yet to clearly understand its pathology or etiology, and our methods of treatment are empirical and as varied as the days of the year.

In fact all treatment has been so disappointing that it is the general rule to do nothing and let the disease run its full course of ten, twelve or more weeks, providing the health of the patient holds out or some complication sets in. This is an acknowledgment of failure to solve a problem and owning to a defeat that is not worthy of our profession.

What is Pertussis? That it is a highly communicable disease of the bronchitis type, we have abundant evidence. That the nervous element is predominant and seemingly uncontrollable, we have had unpleasant experience to impress upon us. Several writers have described a germ claimed to be peculiar to this disease, but fail to make a practical demonstration of it. Koplik of New York, has discovered a bacillus-pertussis of extremely small size, similar in size to the influenza bacillus, and

his claims have been confirmed by Czapelewski of Cologne, but neither of them have yet been able to reproduce the disease with it. The results of treatment would seem to confirm their claims of the local germ origin.

It has been the generally accepted theory that whooping-cough is contagious at all stages of the disease. Later observations seem to prove, however, this is an error and that it can only be given during the preliminary cough, or at the latest during the first week of the whoop. This explains the difficulty in controlling its spread in a community where it once gets a start, the patient being annoyed by a dry hacking cough for a fortnight or more before its true character is known. By this time the mischief is done by the exposure of many victims.

One has aptly remarked that he makes his diagnosis by his inability to relieve the cough. If the early cough yields to ordinary treatment, it is not pertussis. If it is affected by it, it is pertussis. Generally the diagnosis is soon confirmed by its characteristic symptom; but in the mean time many have been exposed.

The claim that it is contagious only in the early stage has been substantiated by several observers.

Weil several times exposed a ward full of children in an orphanage by placing in the ward a patient in the second week of the whoop. In one experiment only was it communicated, and then only to one child.

Two cases lately came into my care that serve to clearly define the period of development. A boy of eight was exposed at school on April 4th. That was apparently the only time at which he could have been exposed to contagion. On the 10th he began to cough. His sister of five lives in an isolated house in a farming neighborhood, where no pertussis had been. She was visited by the brother from the 8th to the 12th. As soon as his cough was noticed (the 10th) he was taken away. She

began to cough on the 21st and the whoop commenced on the 28th. This would indicate a period of incubation of six to ten days, and about a week more for the development of the whoop.

Observation in other cases confirms this view.

The treatment bears out the germ theory, and that it is of local origin. No general or internal treatment has yet given much result except as a tonic, antispasmodic or expectorant.

Of the general remedies now used, belladonna, quinine, antipyrin, bromoform, bromides and remedies of these classes, nothing has yet proved of more than doubtful virtue.

Quinine is an excellent tonic, ipecac a useful expectorant, belladonna and antipyrin temporary paralyzants or antispasmodics, but no one claims for them that they modify or shorten the course of the disease.

Of antipyrin, all experience would condemn its use in a disease where the heart-strain is so great as in pertussis, especially so, as only temporary benefit is derived from it. Yet many excellent authorities assert that careful and extended observation fails to show the least sign of its depressant action in this disease.

Moreover such constitutional remedies are not necessary where much better and entirely satisfactory results can be obtained by simple, pleasant and easily applied local treatment.

Lenrianx of the Paris Academy of Medicine, who made a special study of pertussis, shows that the treatment should be purely local and antiseptic. More recent reports are overwhelmingly in favor of local applications, either of swab or spray, to the throat and nose, of antiseptic, germicidal or anesthetic remedies. Bichloride solution (1 to 1,000) resorcin, asaprol and citric acid, yield excellent results. A 2% solution of citric acid applied by a swab or spray to the fauces has a marked ef-

fect in allaying the spasmodic cough and cutting short the course of the disease. Used also in the form of a lemonade, it is agreeable as well as effective. It may well be questioned how much the effect of antipyrin, quinine and like remedies, is due to a local germicidal property. We can also learn much from the laity. Many of us are familiar with the practice of families going to the gas-houses to inhale the fumes. Unless it had some virtue the practice would not be so generally resorted to. The vapo-cresoline lamp is probably used more universally by physicians and the laity than any other treatment. The virtue in this lies in the fumes of creosote, and certainly it has a marked effect in many cases.

With these facts then, I submit that the rational modern treatment should be local and antiseptic. To secure this, we desire to choose that remedy which is most easily and agreeably applied with the least injury to the system and the least offense to the senses. To my mind nothing so fully meets all these conditions so well as formaldehyde, our most recent germicide and disinfectant. A recent experience in an epidemic of pertussis, taught me that it had virtues beyond anything else I tried, and its effect in controlling the disease was so marked as to convince me that it was practically a specific.

If it can be used in the early stages of the disease, it will prevent its full development and even abort it. If, however, the cough is well established and whooping begun, its effect is not so marked. Used in the first week of the whoop, it has not yet failed me in checking the cough and greatly modifying and shortening its course. My method is to wet a spot of six or eight inches width on a towel, with the ordinary solution (40%) of the trade, and hang it up in the sleeping-room of the patient after sleep has claimed him. The fumes from this quickly pervades the room and will last most of the night. The patient seldom seems conscious of the fumes, which of

course are very irritating at first to the mucous surfaces. The parents should be carefully warned of the unpleasant effects as well as the perfect harmlessness of the formaldehyde. Both physician and parents should also understand that immediate results must not be expected. My experience has shown that it takes about five or six days to obtain the good effects. During the first few days, the cough continues about the same with possibly fewer and less severe spasms, then they rapidly grow less frequent and decidedly less severe, and the little patient loses the haggard, worn look and seems to lose the dread of the cough. During the day it will be found more convenient to use the formaldehyde with a swab to the fauces, or better still in a spray. This is easily and quickly done and the child is at liberty to spend his time in the sunshine and outdoor air. All physicians recommend outdoor exercise for the patients in suitable weather, and here again we find we have been unconsciously perhaps, using Nature's own disinfectant.

The convictions of the virtues of the treatment have been formed by an extended experience in a large number of cases, and so marked has been the relief afforded, that I have already gained a notoriety that is decidedly flattering. Grateful acknowledgments from parents who have witnessed the relief afforded and many of whom have passed through previous experience with the disease, come in as pleasant rewards of this study. As whooping-cough is now quite prevalent in the State, I recommend to you these suggestions, confident that you will be gratified with the results.

DISEASES OF THE SPANISH-AMERICAN WAR AS SEEN BY

LEONARD B. ALMY, A.B., M.D.,

LATE MAJOR AND CHIEF SURGEON, U. S. V.

NORWICH.

We have had a war, in point of fact, in view of the present conditions in our far Western or Eastern pospossessions, we might say, we have a war: not one of very large proportions but big enough to demonstrate the truth of the old saying, "In time of peace prepare for war." I say that it demonstrated this truth, because we had not prepared for war at all. Of course we had our little regular army and they proved themselves "first-class fighting men," but preparations which should have been made by what is called in Europe, the "general staff," were deplorably lacking. On whose shoulders the blame should rest, the verdict of time will have to decide; I have no opinion to express. Congress is surely at fault. In looking at it from a medical standpoint, you know that the lack of medical officers was brought forward most emphatically during the late war and hundreds of contract doctors, acting assistant surgeons U. S. A., who, many of them, made no pretence of being military surgeons, were hurried forward to fill the gap. It was found by experience that the number of medical officers required to properly care for a division of twelve thousand men was at least forty-four, whereas the Hull bill gave us thirty-one. The new army bill which has become a law allows how many? Thirty-one, just what we had at the beginning of the war. I think you see the point. However I am not going to criticize the powers that are supposed to look after the interests of the army,

but give you a few incidents of medical life in the Army of 1898 and tell you of some of the diseases which the surgeons had to combat.

When I reported at Camp Alger, Virginia, about the first of June, I found that the most common troubles among the men were diarrhea and dysentery. These were undoubtedly due in great measure to the ignorance and imprudence of the recruits, for that is what they were, raw recruits. They would eat anything that they could bite and drink anything that was wet, and used very little sense in taking care of themselves. The diarrhea was apt to terminate in dysentery, and there seemed to be a difference of opinion as to the amount of diarrhea medicine needed. Someone, who was higher in authority than I, could not seem to appreciate the difference between 2,500 hardened regulars and 250,000 unacclimated "rooters," as regarded the amount of medicine required. We got along pretty well, for a rich lady of Washington, the wife of our Acting Assistant Adjutant General, asked if I needed anything for the men, and when I told her that five gallons of paregoric would be acceptable, it put in an appearance the next day. When I complained of a shortage in "Tab. carminative," I was told: "Give them anything—you have plenty of quinine." Once in a while one of our men would develop pneumonia and Virginia pneumonia in the field is a horribly fatal disease—as was seen during the civil war.

Of course the whole army had to be re-vaccinated, and then there was a time. The vaccine points were all right, as far as one could judge, but the men could not take care of their arms and the vesicles would break, and the sore become infected from the dust, which was abominable, and such looking vaccination arms I have never before seen. Why we did not get cases of tetanus is one of the mysteries of the war. When we started on our march across Virginia, the 4th Missouri Regiment was not able

to move with us, because so many of the men were unfit for duty on account of sore arms from vaccination. I think that some four hundred of the regiment were on sick report.

Venereal disease, in its milder forms, became quite prevalent, owing to our proximity to Washington, and it was attempted with more or less success to isolate these cases; so we had a venereal ward in the Second Division Hospital, and as a prophylactic measure against a second attack, all these patients were put on "light diet."

One of the hardest things to impress on a "recruity," next to the fact that he must be careful what he puts into his stomach, is the necessity of proper sanitary measures with regard to the refuse discharged from the body. It was rather difficult in Virginia to make sinks or latrines, as the soil being of red clay is non-absorbent and consequently not particularly fitted for disinfecting purposes. However the surgeons were quite careful in their inspections and as long as there was ground which could be used for sinks, the Second Division, of which I had the honor to be the Chief Surgeon, got along without that scourge of army camps—Typhoid fever. We had in the first six weeks of our stay at Camp Alger only twelve cases of typhoid among 12,000 men. We were, metaphorically speaking, patting ourselves on the back, for our neighbors of the First Division had an epidemic on their hands; when all of a sudden the disease struck our Division, and after that the men came down at the rate of ten to twenty a day; nor from one regiment alone but from all. The 1st Rhode Island and the 3d New York, two of the cleanest regiments in the command, suffered as much or more than the 22d Kansas, which was not as careful in its sanitation and had made me disgusted with them on several occasions.

Who was responsible for the fact that at Camp Thomas and Camp Alger, 75,000 men were kept in Summer on the

same ground for nearly two months and a half, in violation of one of the first rules of military hygiene, a rule which was known to the ancient Greeks and Romans and is followed by the Wild Indians of our Western plains, it is impossible to say.

One cause of the fatality of the typhoid among our soldiers was due to the necessity of moving the patients to Fort Myer, as we were ordered to do. Transporting a typhoid patient ten miles in an army ambulance is not conducive to his general health.

After the Secretary of the War decided that our presence within ten miles of Washington was a menace not longer to be tolerated, and we were turned loose on Northern Virginia, Fort Myer became full and it became necessary for me to establish a typhoid hospital at Bristow near Broad Run. I left a brigade surgeon with that hospital and all the Hospital Corps men that I could spare, and the column moved on. As you might imagine, our supplies were not as adequate as one might wish, and the army ration is not the best diet for typhoid patients. The "Red Cross" came to our assistance and supplied us with an abundance of good milk, so we were fairly well off in that respect.

When I ended my career with the Second Army Corps on the day that the "protocol" was signed, I had twenty typhoid patients lying on straw in the mud and thirty others sick in the same fix and if there was a bed-pan anywhere in that "outfit," I did not se it. Another disease, which we had always with us was "Measles." This, as you know, is a disease which always comes to a recruit camp, and we had it all the time. At one time we had in the hospital seventy cases at once, and the ward smelt as though an army of mice had taken their abode there. The type of the disease was mild and we lost but one case.

After leaving Virginia I was ordered to the famous

Camp Wikoff, to assist in caring for the Fifth Army Corps on its return from Cuba. Their home-coming reminded of those lines,

> "Out of the jaws of death, out of the mouth of Hell
> "All that was left of them" came the Fifth Corps.

Up to this time my work had been among the Volunteers, but now we had the flower of Uncle Sam's Army coming to us—and such wrecks as they were. I think I shall never forget how I felt when the first ambulances arrived with men from the transports. They carried the most dilapidated body of men that you could imagine, yellow and thin and weak, not to speak of being dirty. It seemed as though some of them could not live to get into the wards. We stood there all one afternoon unloading men from the ambulances, and dosing every man with a drink of whiskey before he was sent to the wards. Some enterprising kodak fiend snapped me as I was standing with a bottle in one hand and a tin cup in the other, and the next week the picture was in one of the illustrated papers. It was astounding to see how the bracing air of Montauk with good nourishment brought most of these men back to life. The majority of the cases were exhaustion and semi-starvation and starvation diarrhea.

The suffering on the crowded transports must have been fearful and the seasick men could not eat the "travel ration" on board, while the foul air of the berth-deck assisted in bringing them to a pitiable condition. As an old Regular officer said, "One good live regiment, that was fresh, could lick the whole Fifth Army Corps." We had also a large number of cases of "Calentula" or Santiago fever which was much like typhoid in appearance, but which rapidly improved under the administration of quinine and stimulating treatment. Most of the typhoid fever was complicated with one of the forms of malarial fever and the peculiarity of the blood-examination was

that as the typhoid symptoms developed the plasmodium would disappear to reappear with the recovery from typhoid. All the cases which came from Cuba were benefited by quinine. The malarial cases were many of them of the pernicious type and the only method of treatment which was of the least avail, was the hypodermatic administration of the Bimuriate of Quinia and Urea. Cases of malarial fever would be brought to us in coma, which had been preceded by convulsions, and congestive chills were not a rare occurrence.

Another trouble which attacked the troops was ameboid dysentery which yielded only to high enemata of large doses of quinine. Bed-sores formed a frequent complication in all classes of cases. It was almost impossible to prevent them, as we had no water or air-beds.

In the delirium of the various fevers the men fought their battles over again and it was found necessary to have all weapons of whatever kind or description removed from the wards, and put in charge of the quartermaster, for otherwise we had the spectacle of a living, skeleton staggering up and down the ward with a Cuban machete—dangerous both to himself and others.

After things became settled at Camp Wikoff, we had nearly everything that any one could wish for in a large hospital, but the reporters of some of the papers had orders—I have it from their own lips—to tell only that which they saw which in their judgment was blameworthy and nothing that was praiseworthy.

The nursing in the main hospital was performed by trained nurses while the orderlies were mostly untrained hospital corps men, while in the Annex Hospital, which I had the honor to command, we had a hundred and four Sisters of Charity, who are most admirable in a military hospital, for they have been brought up under a rigid discipline and they obeyed orders to the letter and any complaints which they had to make came "through regu-

lar channels," i.e., the Sister Superior. They were models of neatness and having been used to hospitals where there were no orderlies, they saw themselves that everything was kept clean.

Considering that we treated in the U S. Hospital somewhere in the neighborhood of 8,000 cases the death-list of about one hundred and seventy-five was, I think, remarkably small. There was considerable discussion as to whether we did or did not have yellow fever at Montauk. The experts differed as they usually do about yellow fever. My private impression is that we had about seventy cases there—most of them mild and there was not a single case, to my knowledge, developed at Montank, although all kinds of cases came up in the fourteen ambulances which we had in use and we made no distinction—for we could not. Yellow or typhoid fever, diphtheria or measles or a case of exhaustion, all used the same ambulances, though not at the same time.

On the whole I think that we all at Camp Wikoff were remarkably fortunate in being as successful as we were.

No! I didn't see any embalmed beef.

SOME POINTS OF PROPHYLAXIS IN THE VOLUNTEER MILITARY SERVICE.

J. B. McCook, M.D.,

HARTFORD.

I have some hesitancy in presenting so dry a subject and one, I fear, that will interest the majority so little, yet the very great importance that this branch of medicine bears to the well-being of our citizens when called to arms, and the fact that upon their condition, or lack of condition, very largely, the fortune of our country's arms in a campaign may depend, makes the subject for me dominate all others.

In giving these few points of prophylaxis, I desire that the gentlemen will fully understand that my experience embraces, life in camps established in this country—no protracted marching, far less active campaigns.

THE SELECTION OF MEN.

After seeing, during the first two weeks of May, the First Connecticut, the national guardsmen, going through their stiff drills in a satisfactory manner at Niantic, little more, I thought, could be asked than what was possessed physically by these men; but even the little taste of hardship we saw at Camp Alger, convinced me that the United States regulations governing recruits were none too strict, as to proportionate height, chest measurement and weight. Again, the medical officer who is to take care of the men should have a large hand in the examination of the recruits, since it will be particularly to his interest to see that men be enlisted who will not swell the morning sick-report at the first change of food, or first hardship.

An efficient quartermaster-sergeant and a good set of cooks and properly watched assistants is almost an essential combination for the health and contentment of every company. At first, after seeing the lack of variety in food rations given many of the men, Uncle Sam's methods appeared crude, to say the least, but with fuller knowledge, I came to see that for "post" duty at least, the army-ration was as good, with a very few exceptions, as one could desire—but it pre-supposes competent men at the other end; quartermaster-sergeant and cooks. The government gives the staples and enough of them to allow of trading off the surplus for whatever the men of that particular post require or desire—and to an extent that will insure a generous bill of fare. To be sure, the bacon ration so-called (it is generally fat pork without any lean!) strikes one as a relic of barbarism when a method had not yet been found to preserve fresh meat. It certainly appears to the average essayist at stomach digestion hopelessly bad, whatever an ultimate chemical analysis may show as to the presence of high energizing properties. However, it should be said in its defense, that in the South it is largely eaten, and we found the negroes always glad to get it. A first-class breakfast bacon could be substituted at an increase of from one half to two cents a pound, I am informed.

It is not only with the sufficiency, or insufficiency, the fitness, or unfitness, of the government ration that one has to deal; but with the much more annoying problem, the outside supply,—among which largely figure,—home boxes, stands and hucksters. As a rule the home box supply is well cooked, and as it is shared among at least the tent-mates, little is heard from it by the surgeon. The stands and hucksters sell all the most indigestible foods, the greater part poorly cooked and atrociously served. Many a time I have seen men eagerly buying from one of these stands such stuff as would surely re-

ceive his hearty if not forceful condemnation at a boarding-house or at home. Milk in Virginia, we, at least, found generally skimmed or watered, and sometimes I fear both processes were applied to a single sample; generally none too clean, and not infrequently on "the turn." A certain per cent. of men after a steaming drill, in spite of warnings, was sure to make a rush to the carts and there toss off a quart or two of milk. The result was what one would have expected.

What then for prophylaxis? Keep hucksters of every sort out of camp and prevent the setting up of stands indiscriminately. Permit one man to furnish certain food-stuffs to each regiment at fixed prices, with the understanding that selling should only take place at certain hours, (before and after each meal); and the whole traffic open to inspection, with a failure to keep to the regulations, cause sufficient to forfeit the right to sell. This necessitates a general system, else men would go from a regiment which had no unlicensed stands, as was the case with us, and buy at those that had.

THE DRINK PROBLEM.

This, in the army, as in civil life, is a large one. It is a notorious fact that a certain percentage of men will get drink if they have money; the uniform appears to raise that percent. I therefore believe that a minimum of harm will be done by placing easily within their reach a liquor clean, of good quality, and of a low alcohol percent.

As an example of what men will do when desiring to get liquor.—The County of Virginia in which we were was "prohibition," so one enterprising native took his very poor hard cider, put molasses and vinegar in it, and sold it as sweet cider for five cents a drink. I did not have a chance to taste this concoction, but I was assured by an unbiased person that it was excessively nasty. At any rate, it produced a nasty drunk and one of the worst

forms of indigestion and diarrhea, at short notice, that it has been my fortune to see.

The regimental canteen, with a certain maximum allowance of beer sold to one man, and this drunk on the spot and at a table would be the prophylactic measure, in my judgment.

One more measure, in the same general line: It is commonly recognized that before a hot march no alcoholics should be taken. The march through Washington and the trip in the cars from there to Dunn-Loring impressed this forcibly upon me. Some of the men had gotten hold of a good deal of beer, in one way or another, just before starting. As the march progressed the numbers prostrated by the heat increased to an alarming degree. Of those I worked over, almost all without exception, had had liquor.

The measure of prophylaxis here is difficult, since, perhaps after a long, hot ride of from twelve to eighteen hours the train comes to a stop within a stone's throw of a saloon. The door guards are there, but they are next to useless, since the windows of the cars are found "good enough." I would suggest a cordon immediately placed about the whole train at any lengthy stop; then march the men out—it will give them a chance to stretch themselves after their long constrained position. The novelty of escape by an unusual route will have been taken away and the chances are, much of the craving for drink with it. At any rate, it will be more difficult to get to the saloon!

While I think the canteen, properly regulated and carefully watched, to be the most practical safeguard at posts, I ought to add that for campaigning I am just as strong for total abstinence. Captain McClintock's experiments at the one extreme of temperature and Sir Herbert Kitchener's at another, establish the great value of keeping drink from the men altogether.

THE DRESS.

For the work that we of the First Connecticut were called to do, the uniform, regular and fatigue, the underwear, shoes and campaign hat appeared admirable. I can only say on this head that with two sets of underwear it is not always easy for the most careful to keep clean and dry, and a real surveillance must be had of the condition of the clothing, if the men are to be kept well and happy. For let a few body-lice be seen in a tent or guard quarters and the result is anything but pleasant. A form of muscular rheumatism and slight colds led to an investigation, and the cause appeared to be that the guards feared to occupy their guard quarters through a belief that they were infected with vermin. Their blankets were left behind for the same reason, so they perched on the nearby fence in the heavy dew, until driven down by drowsiness, to sleep without covering, on the ground. An immediate careful search revealed nothing in or about the tents. Several times, I am convinced, regular scares have been gotten up on the report of vermin seen, when the offending Mr. Pediculus vestimenti could have proved an alibi. The persistently dirty man can perhaps be best dealt with by his fellows; and even a treat of sand and a scrubbing brush will save much blue ointment. However, there can be no doubt that regular inspection, at frequent intervals, with a view to insuring cleanliness of person and underwear, saves much and serious trouble. It may be assumed that the difference between the health-record of the naval reserves and the army volunteers is partly due to the constant proximity of the former to clear water, and to the rigid enforcement of its use by them for washing purposes.

THE TENT—ITS CONDITION, AND ITS SURROUNDINGS.

An "A" tent is not supposed to hold six men; and yet that is what it had to shelter with us the greater part of

the time. Neither is one so full of holes, that it appears as though a load of shot had been put through it, a safe or pleasant abode in wet weather, and yet that is what we had another part of the time. Of course there was but one remedy, and it is so obvious that whatever the medical man had to say on the subject appeared a superfluity.

Floors, of course, are impracticable in camps to be occupied but a short time, but when a long sojourn is expected, the expense is repaid many times in the well-being of the men. An admirable substitute, but impossible with six men to a tent, is the bunk, made of interwoven twigs. They are easy of construction and need be but a few inches off the ground.

One of the first duties after pitching camp is the ditching of each tent, and the construction of the general company street ditch. In tent ditching, the earth should be thrown inside the tent, and there well tamped.

Straw, as bedding, is to be condemned, I think, unless great personal care is given by the officers, to see that it is taken into the street every day, turned and thoroughly aired. The bed-sack furnished by the government at all permanent posts is excellent, and together with the improvised bunk, makes a most comfortable bed.

The systematic airing of quarters is one of the most difficult things of accomplishment; sides of the tent up, and all bedding and blankets out, with floors, if present, up once in so often.

The necessity of general policing is too obvious to more than mention, and that is the thing best done in camp and seldom requires a word from the surgeon. But the kitchen policing is quite another thing. It is the spot, next to the sink location, least visited by the officer of the day, and it is surprising how much filth will accumulate unhindered in twenty-four hours. The fragments of food, designated swill in civil life, are apt to be dumped anywhere, and a meager covering of earth marks a high

standard of cook ideals. Meat will be found exposed to swarms of flies, and bread left in damp places.

Unless all kitchen refuse can be received into water-tight cans and then systematicaly removed, cook pits (cement lined, in permanent camps) should be established about twenty-five yards from the cooking outfit, and it should be made the duty of one of the assistant cooks to deposit and cover refnse immediately. All water used in cooking should be thrown into the same pit and simiiarly covered. The eating about the tents, except in rainy weather—the absence of mess-tent being presupposed—should not be allowed, on account of the minute particles sure to be left after the most thorough policing, and which attract flies.

THE ESTABLISHMENT AND CARE OF THE LATRINE, OR SINK.

Everything else fades in importance before the latrines. They must accomplish the purpose designed and in doing this, they should do as little harm as possible. That is, they must be easy enough of access and sufficiently comfortable to insure the men using them of choice. They should be so ordered that the ground be polluted to the minimum.

There is a period in the formation of every camp when there is a lapse of some time between the getting on the ground and the constrnction of sinks—this period is long, or short, according to the weather contingencies, the care of the commanding officer, and the supply and location of tools. After the erection of the hospital comes, in importance, the digging of sinks; but, as I have just said, there mnst of necessity be a dead point in the construction of sinks—this period is long, or short, according to the weather contingencies, the care of the commanding officer, and the snpply and location of tools. After the erection of the hospital comes, in importance, the digging of sinks; but, as I have just said, there mnst be a dead point in the construction mechanism, and the English

system appears to meet the defect admirably. With the arrival of the first body of troops an officer is present to select a convenient spot on which a large yellow flag is planted, and any man found relieving his bowels outside a fixed radius from the flagpole is treated with the same severity as though failing to use an established sink.

The location of the latrine must be governed largely by the proposed cook quarters, since, other things being equal, they should be well removed from these, but a filthy latrine will be a nuisance, and form a danger at almost any distance, while a well-kept one can be maintained comparatively close at hand without danger or annoying result. I will venture to go into some points of its construction, although general rules are laid down in any treatise on sanitary engineering, I presume.

All bushes should be removed from the site, and between it and the tents. The trench should be ten feet deep, if possible, and labor will be saved if it is four feet, rather than two feet, wide, as is the general construction, since the horizontal beam can then be turned about, thus giving double capacity—not an unimportant item when possibly a very stiff clay has to be gone through, with the thermometer standing somewhere around the 100° mark. The length of the trench, of course, is governed by the number of men. There should be a screen of wattling all about the sink, and the whole should be well ditched, else one is likely to have all the work undone by the first heavy rain. I would like to make a strong plea for "one company" sinks, since we found, by thus limiting the responsibility as far as possible, very much better results than by any other allotment. A shovel is provided for each sink and every man is required to attend immediately to his particular evacuation. At Camp Alger a guard was stationed to enforce this order, but before and since I have obtained almost perfect results without the

guard—the necessity for the care having been explained. Should there be typhoid or other contagious disease present, lime or some other good disinfectant should be dusted in thickly at least once a day, and it is safer to have it dusted in anyhow. If the camp is likely to last for any length of time a roof, seat-board and back-rest can be easily and cheaply provided for the sink thus, in every way possible, making the most important of all operations of the day as comfortable as may be.

For a permanent camp I can testify that there need be no great labor or expense in putting up sinks that will protect one's water-supply absolutely. A regular seat-board is required. Any substantial barrel, as vinegar, molasses, etc., is cut in two, and the tubs thus formed are supplied with rope handles. A duplicate set should be provided. Boxes of dry earth are placed handy, with small fire shovels, and all the sanitary police have to do is to keep the boxes replenished and the tubs removed as required. Often one of the farmers living near by is only too glad to take care of this latter item for the sake of the fertilizer. It is needless to say that all contents of bed-pans from the hospital should be treated as they would be in any hospital in civil life.

In permanent State camps, if a water-supply can be procured, I believe water-closets are the best thing, much like the system proposed by our State quartermaster-general and so promptly thrown into oblivion. Or, if this is not feasible, a shallow concreted trench, with zinc-lined boxes, arranged to slide in and out of it and the same arrangement of dry earth and small shovel.

A large cemented trench could be located at any suitable place back of the sinks, and into it could be emptied the contents of the boxes, each being covered thoroughly with earth and lime, and the whole pit emptied at reasonable intervals, or at some convenient season after the abandonment of the camp.

The automatically-working earth-closet can be classed with water-closets for perfection of result and ease of operation in permanent posts. The British use them in some of their permanent posts to my knowledge. Years ago the death-rate among Her Majesty's troops in the West Indies from yellow fever and kindred diseases was enormous. I understand that now these diseases are almost unknown among the men ,and it is not unlikely that their intelligent disposition of the latrine question deserves part of the credit. Lee's camp at Jacksonville is reported to have very little typhoid, and the prophylaxis here was taken in hand by the city authorities, who daily burned all camp refuse. At the English garrisons farmers compete for the privilege of removing it, and attend to it regularly every night.

MIND AND BODY.

The value of keeping the mind alive by home letters, reading matter, and in general by such instrumentalities as were furnished by the Y. M. C. A., has been proved in every camp in this country. When the man loses heart he soon goes to pieces—and then he becomes slovenly, dirty, loses self-respect and is likely to end in the hospital. For the best results in mind, no less than in body, I believe vigorous outdoor games should be introduced in camps whenever there is opportunity, such as base-ball, football, quoits, etc. Target practice would be of value from this standpoint, and would more than justify its cost to the government, even if it were of no use as a preparation for actual fighting. Blank firing is not the same. It is purely mechanical, and so has the same weakness as the regular drill. This interests the volunteer at first, but as the performing of evolutions becomes to him a second nature, to that degree does it do him little good physically or mentally. Here again the English have long been alive to the value of "sports" in their military posts, and the little experience of my own

has both shown the evil from their absence and demonstrated the value of their presence.

In conclusion I would like to suggest that an even more strict mental qualification be insisted on among volunteer recruits than is deemed necessary with regulars, since the volunteer is expected to learn in a few months what it has taken the regular years to acquire.

Again, in all orders given for a sanitary or hygienic purpose a relation between cause and effect should be stated, if possible, to each company assembled. If that is not practicable, to the captains and first sergeants.

But least of all will the sanitary portion of the great military machine run itself, and it is only by the constant caretaking of competent and conscientious officers, commissioned and non-commissioned, that the surgeon can hope for the best results.

MILK.

ITS PRODUCTION AND CARE.

SAMUEL PIERSON, M.D.,

STAMFORD.

The method of Production and Distribution of Milk which has been in vogue for many years, and is even now the rule rather than the exception, is so far behind our knowledge on the subject that one must wonder why no proper laws have been enacted to prevent the contamination of this most important article of food.

The picture of the old-fashioned barn-yard and all that goes with it, is probably familiar to us all:—the motley herd of cows of all breeds and conditions of health, udders dirty and unwashed, kept in filthy yards or more filthy stables, which are never cleaned except in the most incomplete manner, the milking done by the farm-hands just from the plough or from the manure-pit, hands and clothing in such condition as this work would necessitate. In one corner of the stables, surrounded by manure would stand the large milk-can uncovered, ready to absorb all odors; then an insufficient cooling, perhaps by standing the can in the brook for an hour or two before starting it on its journey to the helpless infants waiting to take their chances of life on its purity.

Even yet the dangers are not passed, for here comes in the middleman or pedler, often a careless and ignorant person whose only thought is to reap the largest return from his route; and lately, another source of danger has arisen in the prevailing fashion of selling the milk in bottles. This method, which is a great safeguard if done at the dairy and under proper supervision, becomes an added item of importance when done as it too often is by the middleman in some filthy shed or stable, without

proper washing or sterilization of the bottles just returned perhaps from some house infected with Typhoid Fever, Diphtheria or Scarlet Fever.

The efficiency of a thorough supervision of the milk-supply in cities has recently had a practical demonstration in Buffalo, N. Y. Within three days an unusually large number of cases of scarlet fever appeared in a certain part of that city. Investigation showed that twenty-one of these cases were on the route of one milkman. The dealer's premises were subjected to a thorough inspection and found to be in good condition, with no illness in his family or those of his employes, nor had there been for some time. After more investigations it was proved that all other sources of infection, except the milk-supply, had to be eliminated, and attention was again directed to the milk-dealer with the same results. Within a day or two eight more cases appeared on this man's route, making a total of twenty-nine. One of the milk inspectors was detailed to visit the farmers supplying the city dealer with milk. All the farmers but one showed a clean bill of health. This one was in a convalescent stage from some disease, the exact nature of which could not then be determined, but four other members of the family were found suffering with scarlet fever. Thus it was evident that he had been ill with the same malady, and in attending to the milking and shipping had sent the germs of the disease and death to innocent families in the city. A quarantine was at once established against the farmer having scarlet fever, and no more milk was allowed to enter the city from his farm. Immediately the spread of the disease stopped, and its continuance was limited to the families already infected. Had it not been for the thorough system of inspections, so systematically pursued by the Buffalo Department of Health, it would be impossible to say how much more infection and death would have been distributed through-

out that city before the disease had run its course in the farmer's family. By the system employed every case of infectious disease must be reported to the department by the attending physician, immediately upon discovery. The premises are inspected and probable or definite sources are remedied. A register is kept of the milk-dealers doing business within the city, and every case of infectious disease is credited to the respective dealers. An object-lesson of this kiud is invaluable to the profession throughout the country, as it shows the impossibility of giving too much atteutiou to the milk-supply. The uegligence aud iudiffereuce of communities in this matter is amazing.

Lest we might think the picture overdrawn, I would say that within a year I have seen a milk-wagou in a neighboring town, adorned with milk caus iu front from which customers were supplied, while behind the garbage of the same customers was loosely thrown in.

When perchance, some energetic Health Officer has his eyes opened to these many evils couuected with milk-supply, and seeks the advice of his City Attorney, his surprise is great when told that there are no Laws by which he can regulate any abuses of this sort, except as they relate to the actual adulteration of the milk by water, removing the cream or adding chemicals to prevent decomposition. As the addition of chemicals is not a common practice and the watering of the milk is perhaps the least harmful of adulterations (if the water is pure) the Health Officer is apt to drop the whole subject iu disgust at his helplessuess. If the water used for adulteration is brook-or well-water, the results are often disastrous, as witness the Stamford Typhoid Epidemic, all due to one shallow filthy well under a stable, which, according to the milkman was only used to wash the cans, but which no doubt iu some mysterious way found

itself in the cans when the supply happened to be a little short.

The evils of the whole business are so glaring that all can see and appreciate them; the remedy is not so easy or plain. The tremendous power of the farmer and dairymen is against laws regulating and restricting the trade, because they erroneously imagine such laws would lessen their profits. There is no doubt that the future will give us as careful an inspection of milk-production as now prevails for other food products. For the present we must probably content ourselves with such efforts and influence as local Medical Societies can exert in swaying public opinion, and in persuading local dairymen to follow out a certain line of conduct, as laid down by the Medical Societies; in return for which, we can influence our patients and the public to patronize them. Perhaps I can best illustrate the model dairy by describing one that we are fortunate enough to have located in our town. This dairy was started some years ago by Capt. Greene, a retired Army Officer, and his ambition to make it the best in the country, has apparently been attained. The herd comprises fifty cows of different standard breeds, all of which are examined by a veterinary surgeon at stated intervals. The stables are large and airy and have a cement floor, with a drain to carry the liquid waste to a tank which is emptied twice daily. The solid manure is also removed daily from the yard and the floor flushed with water. Each cow has its own drinking trough. The cows are groomed daily and the udders always washed before milking. The tails are tied up in the air by an ingenious device. The men are all uniformed in clean linen suits and are obliged to wash their hands before each milking. Milking time is at 4:30 P. M. and 4:30 A. M. The milk is first passed through two metal and two cloth strainers to remove any floating dust, and is then aerated to remove the animal odor,

It is then cooled from ninety to fifty degrees by passing over coils of pipe through which ice cold water is constantly passing. This removes almost entirely the danger of the development of Ptomaines. The milk is now run into the bottles and sealed with air-tight caps, and goes to the refrigerator ready for the consumer in about twenty minutes from the time it is milked.

What is accomplished here on an elaborate and expensive scale, can easily be duplicated by any intelligent dairyman if you can once make him believe that such trouble will pay financially in the better prices and better custom he would receive.

That this dairy is able to market its product at ten cents a quart when other dairies only get from five to eight cents for theirs, is proof of its business success.

As we can get no substantial help from existing laws on the subject, and can for the present expect no better ones, let us see what has been accomplished by the profession in this line.

The first practical effort to control the business so far as I can learn was made in Newark, N. J., in 1893, and was reported by Dr. Coit.

Their plan provided for a commission of medical men, who, with the support of physicians generally, should endeavor to influence a supply of milk produced under regulations imposed by themselves.

It was considered essential to success that the commercial interests of the dairymen should be protected by promising medical support of the sale and increased price to be charged for the milk.

The dairyman was to be bound by legal contract with penalties, involving a regular inspection of the dairy, bimonthly chemical and bacteriological examination of the milk and a veterinary inspection of the herd; also control of pasturage and fodder, all brewer's grains and starch foods being especially prohibited, determining the loca-

tion and construction of buildings, drainage and water-supply, and regulating the care, cleanliness and handling of the milk from the cow to the consumer in much the same way that the work is carried on in the Stamford dairy already described.

Three general requirements, of standards of quality were formulated:

First.—An absence of large numbers of micro-organisms, and the entire freedom of the milk from the pathogenic varieties.

Second.—Unvarying resistance to early fermentative changes in the milk so that it may keep under ordinary conditions without extraordinary care.

Third.—Having a constant nutritive value, of known chemical composition and a uniform relation between the percentage of fats, proteids and carbohydrates.

This experiment has been practically successful, and has as well been of great value in an educational way.

Other Cities and Towns have followed the scheme in a general way, while some have added the pasteurization and sale of the milk at a low rate to bring it within the reach of the very poor. This charity has been most prominent in Yonkers and the Straus milk charity in New York.

That these various schemes and charities have saved many infant lives no one can doubt, and what has been accomplished in the places mentioned can be accomplished in any town where the profession can be induced to start and back such an enterprise.

For the present it is not laws but the education of the masses to the advantage of clean pure milk, which is necessary. Just as soon as we can accomplish this, then the laws will follow because the people will demand them of the Legislature and no selfish interest can possibly stand in the way.

As a Society, we can, by individual effort in the differ-

ent towns, do much to influence public opinion in this important matter, and before many years are past, the general careless and slovenly manner of conducting this industry will be changed, and laws enforcing the necessary inspection enacted.

Such laws should, in my opinion, provide for State or County or Town Inspectors—Veterinary for the herds and Chemical for the milk.

They should give the regular Health Inspector power to make and enforce rules respecting cleanliness in the utensils, buildings and surroundings of the dairy (especial attention being paid to the water-supply), and in the handling of the milk from the cow to the consumer, absolutely prohibiting the leaving of any vessels or bottles in houses where contagious disease is present.

All milkmen should be licensed by the Town authorities so that their sources of supply could be traced and summary powers should be given to the Health Officer to suspend any milkman from his route for gross violation of the regulations, subject of course to further investigation by the State or County Boards of Health.

That such laws and regulations are bound to come, admits of no doubt in the mind of any one who has looked into the subject thoroughly. How soon that happy day will come to the helpless infant, who gets either his food or poison from the innocent looking white fluid, depends very largely upon the individual efforts of this and other Medical Societies.

MILK.

ITS CONSUMPTION.

F. C. Graves, M.D.,

BRIDGEPORT.

In the wide range of therapy it is not alone in the line of drugs and pharmaceutical preparations that the art of medicine has approximated and even embraced scientific principles, for it is apparent that prophylaxis, which in the broad sense includes dietetics, has kept an even if not an advanced pace. Most of the diseases that we meet with to-day are believed to have for their primary cause one of the pathologic germs. Microscopical and chemical research in the laboratories has undoubtedly proven the existence of these germs, their power of multiplicity, their varied characteristics and forms, and their destructive action upon the tissues. The many discoveries and discussions pertaining to the realm of bacteria and microscopical studies have stimulated the profession to still further achievements in the prevention of disease. In harmony with this attitude the subject of milk was suggested by our Committee for consideration, for there is no one article of food that is so common to the human family as milk; also there is no one article of food that is more apt to become contaminated with the pathologic germs. I believe it is a fact, worthy of demonstration if true, that this one simple food has been the medium for developing and disseminating more disease germs than all other food products combined have been able to do. Knowing that a large share of this dissemination can be avoided by preventive measures, we are brought directly to the reason of our subject. The part alloted me to

introduce for your discussion is the consumption of milk. It will not be possible within the limits of this paper to discuss the use of milk in all its diversified relations to health and disease, but rather the aim will be to review the salient and practical points that should interest us in daily practice.

Infant Feeding. In the drama of life, milk plays the most important part in the act of nutrition, beginning first in infancy. This suggests primarily to our thought the subject of infant feeding. It is recognized by all those who, by virtue of their attainments, have a right to speak with authority, that the best food for the infant is mother's milk, providing that the mother bears no traces of constitutional disease. However much man may feel his power to accomplish, his ability to mould and fashion causes so as to produce salutary and satisfactory results, if he is properly conscious of his own attainments and equally so of his limitations, he will count it folly and labor lost to even endeavor to improve upon nature's method, especially when nature is fulfilling or is able to fulfil her duty without outside assistance. In fact nature should be assisted when aid is required, but she should never be supplanted except for the strongest reasons. The question as to whether a mother shall nurse her own child is ofttimes decided in the negative by misguided parents, and the physician is called upon to give his unqualified confirmation. A decision pro or con carries the weight of responsibility, but the true physician, appreciating the gravity of the situation, will not be guided by fancy or convenience, but solely by the best interests to be conserved constitutionally. It is not entirely to their blame or discredit that some parents desire their children to be brought up artificially, as many are taught to believe that some one of the varied foods is superior in its efficacy to the one that nature has bestowed. It is asserted by our statisticians that the number of moth-

ers who are able to nurse their own children is fast diminishing. Wiedow analyzed five hundred and twenty-five cases at the Freiburg Maternity with reference to lactation statistics. Only half of them were able to nurse their babies during the first two weeks. In ninety-nine no milk was secreted. Imperfect nipples were found in forty-nine, fissures in forty-six, and insufficient secretion in forty-four. Only thirty-three, less than seven per cent., suckled freely without complications. It is stated by a New York physician of high repute that not one-third of the mothers in his private practice are able, if indeed willing, to nurse their own children. Deducting the number who for varied reasons prefer to have children reared artificially, and it is highly probable that in the upper classes of society, not over twenty-five per cent. of mothers contribute directly to the sustenance of their infants. The reasons for this gradual diminution are seemingly traced to the effects of the higher civilization. Society life, consuming so much of time and engendering pleasure, worry and excitement in varying ratios, when indulged in ad libitum, completely unfits its devotees for the sacred trust of rearing children according to nature's plan. But regardless of the inability for maternal nursing as expressed in the statistics, there is sufficient reason to warrant the belief that artificial feeding is employed to a larger degree than necessity requires. The physician himself is in a position to urge the advantage of natural nursing upon those who are able to bestow that gift, and his advice, reinforced by the advantages to be gained, will generally find a hearty endorsement. When however, there is unavoidable absence or cessation of the mammary function of the mother, with no hope of restoration, the only alternative is to select the best form of artificial food, except in the rare cases when a wet-nurse is substituted. To intelligently form a conclusion as to the best food to select, let us first call to our aid the

physiological chemist, that we may know the composition of human milk, for in order to properly substitute another food, we must become acquainted with the one to be replaced.

According to recent analyses, made by Pfeiffer, Koenig, Leeds and Harrington, the average composition of human milk is as follows: Fat, 4 percent.; sugar, 7 per cent.; proteids, 1.5 per cent.; salts, 0.20 per cent.; water, 87.30 per cent. The only natural foods that can compare at all favorably with human milk, is the milk of the cow, the goat or the ass. Cow's milk has from time immemorial entered into the composition of infant foods, and also into other milk-products almost entirely to the exclusion of other milk; consequently with the exception of human milk, it will be the only one considered in this article.

The average composition of cow's milk as determined by Mr. Gordon of the Walker-Gordon Milk Laboratory, who made one hundred and forty thousand analyses, which include the different breeds of cows, is as follows: Fat, 3.5 per cent.; sugar, 4.3 per cent.; proteids, 4 per cent.; salts, 0.70 per cent; water, 87 per cent. Cow's milk, deducing from the formulas, contains one half per cent. less fat than woman's milk, and nearly three times the amount of proteids. It also contains less sugar, over three times the amount of salts, and almost the same per cent. of water. Judging from its composition as compared with woman's milk, unmodified it is not the ideal food for the infant. But experience shows that cow's milk may be so modified, that it will closely resemble woman's milk in the per cents of ingredients, in its appearance and taste, and also in its physiological action. If cow's milk is diluted twice, that is by adding two parts of water to one of milk, the proteids in the dilution will nearly equal the proteids in human milk, but the fat will then be only about one-fourth that of human milk, and the sugar about one-fifth. The inorganic salts in the

dilution will nearly equal the same in human milk. After the proteids have been made equal in the dilution, it is then necessary to add sufficient fat and sugar of milk to make up the deficiency. The fat is furnished by the addition of cream which, it should be remembered, mainly differs from milk in containing more fat. The reduction in the proteids, even in the twenty per cent. cream, is less than one per cent., and the other ingredients more nearly correspond. Remembering also that human milk is alkaline, and that cow's milk is acid, the modified milk mixture may be made correspondingly alkaline by adding from five to six per cent. lime-water, or one grain bicarbonate of soda per ounce. The most valuable and practical contribution to the study of modified milk of recent date is to be found in Holt's Diseases of Children. The tables are complete, easily adapted for ready reference, and are certainly useful to those of us who prefer medicine to mathematics.

Sterilization and Pasteurization. Sterilizing of milk is of comparatively recent date. Cailló states in the Dietetic Gazette for 1889 that Dr. A. Jacobi twelve or thirteen years previously recommended that milk for infants be boiled and placed in small bottles, tightly corked, and kept upside down in ice. This recommendation was soon followed by the elaborate experiments of Soxhlet, of Munich, who prepared the first apparatus for sterilizing milk, and whose writings have been extensively quoted. In the earlier experiments of Soxhlet it was thought necessary to maintain the temperature of 212° for an hour and a half. Such sterilization was found to be effective as far as destroying the germs are concerned, as the milk would keep for about a week, but the continued temperature for so long a time was found to cause changes that made it less desirable for food. The boiling process impaired the taste, the casein was found to be less coagulable by rennet, and was imperfect-

ly and more slowly acted upon by the pepsin and pancreatin. The use of this milk in feeding of children was generally accompanied by constipation. It is now thought by many that the nutritive properties are impaired by the maintenance of so high a temperature for so long a time. Nevertheless, in the hottest weather, if we are using milk from an unknown source, it is better to sterilize to the maximum, than to run the risk of inflicting diarrheal and infectious diseases.

R. G. Freeman concludes that pasteurization at 75° C. (167° F.) affords a safeguard against the deleterious effects of any bacteria which it may contain without interfering with its nutritive qualities. At about the same temperature it destroys the germs of cholera, typhoid fever, diphtheria, and tuberculosis, and also the streptococcus pyogenes, the staphylococcus pyogenes aureus, and the bacillus coli commune. Some of the spores, however, are not destroyed, but it seems to me the liability of their presence is reduced to a minimum if pasteurization can take place within ten or twelve hours after milking. This refers to ordinary milk, to which only ordinary care in the production and transportation has been given. Some of the milk delivered in our city is in warm weather kept on ice from the time it leaves the dairy until it reaches the consumer. There is very little danger of germs developing in milk thus treated, for it is recognized by all experimenters and observers that such action takes place slowly in milk kept at a temperature below 22° C

Pasteurized milk in its clinical use does not show the disadvantages attributed to sterilization at 212° F. It does not cause constipation, nutrition is seemingly enhanced, and the taste is unobjectionable. Edwards states that the English writers and most of the American observers consider that sterilization of milk at a temperature of 212° F. is apt to cause scurvy, and hence pasteurization is recommended.

The process of sterilization, whether by the high or so-called low temperature, is employed to prevent disease. If we could be sure of the absence of pathologic germs from the milk, it is probable that the highest type of nutrition could be maintained by using the raw article. When all cows have been subjected to the tuberculin test, and all modern methods of care and disinfection have been carried out in the production and care of milk, the danger of contamination will be so slight that even pasteurization will be the exception rather then the rule.

My experience with pasteurized modified milk has convinced me of its superiority over all other forms of artificial foods. It is easily digested, infants thrive upon it as evidenced by their rapid increase in weight, and colic and constipation are rarely present. A large number of infants under my care, who have been fed on other foods with disappointing and often serious effects, have undergone a complete transformation in a few days with the use of pasteurized modified milk.

For pasteurizing modified milk Dr. Freeman's apparatus is very efficacious, and is manufactured by James T. Dougherty, New York.

For preparing modified milk previous to pasteurizing, the "Materna" milk graduate, as lately manufactured by The Surgical and Chemical Supply Co., N. Y., is proving of great value. It consists of a seven-sided graduate, properly marked on each side, and indicating the percents. of sugar of milk, milk, cream, etc., that are to be successively added, as recommended for different ages.

For use in infant feeding the objection to the other foods, including Mellin's food, condensed milk, malted milk, Nestle's food, Ridge's food, Imperial Granum, Carnrick's Soluble food, is that they are lacking in fat and contain an excess of carboydrates.

The proteids in these foods, although they correspond in amount very closely to breast milk, are for the most

part of vegetable origin, and vegetable proteids are not thought by our best chemists to be able to fulfil the duties which nature has delegated to the animal proteids.

Rotch expresses his opinion of the patent foods in the following words: "In fact, as my experience in the feeding of infants increases, and as I examine year by year the different foods, old and new, as they are actually given by myself and others, I am strongly impressed with the belief that, with our present physiological, chemical and clinical knowledge, all the patent foods are entirely unnecessary."

Other writers have likewise expressed themselves, and the general conclusion which we derive from their experience, as well as from our own, is that these foods cannot be given for any length of time without detriment, and their continued use should never be allowed without the addition of fresh cow's milk.

If any food is to be substituted for modified milk, modified condensed milk has the preference, if it is possible to obtain cream. Condensed milk of the best brand, when diluted six times, contains about 0.99 per cent. fat, 1.2 per cent. proteids and 7.23 per cent. sugar. To increase the fat to a little over three per cent. it would be necessary to add to the solution one ounce of sixteen per cent. cream. As cream contains 4.3 per cent. sugar, it is readily seen by a little computation that a one to six dilution of the condensed milk, with cream added, will reduce the per cent. of sugar in the solution to 6.81 per cent., which is slightly less than the amount in human milk. This calculation is simply indulged in to show the popular fallacy that condensed milk contains an excess of sugar. One of the objections to condensed milk is the same that has been applied to sterilized milk at 212° if my understanding of the method of preparation of condensed milk is correct. Condensed milk is largely employed in our large cities, and unless modified it is be-

lieved to contribute largely in common with the proprietary foods to the causes of scurvy, rachitis and other forms of malnutrition. When more cream can be added in the process of manufacture, it will constitute a food that will furnish better nourishment to the children of those who are unable to afford the expense of modified milk.

The value of the unsweetened condensed milk for modification lies in the fact that sugar of milk, which may be added to it, is superior to the cane-sugar found in the already sweetened variety.

Without further comment upon infant feeding, let us turn to the general subject of milk, as related to its dietetic use both in health and disease. In milk we find all the elementary substances necessary for health, hence it is called a complete food. For continued use, however, the substances are not in the proper proportion, and hence some modification is required. According to I. Burney Yeo the albuminates and fats in milk are in excess as compared with the sugar, thus rendering it unsuitable for the sole nourishment for any length of time. This deficiency is easily remedied by the addition of carbohydrates. It is stated that an adult requires daily twenty-three ounces of food free from water. This being true it would require nine pints of milk of the specific gravity 1030 to supply the amount of solid food necessary, but the recipient would then have an excess of albuminates, fats and water, and not sufficient carbohydrates. It seems to the writer that this is one of the reasons why milk is the diet par excellence for all fevers and wasting diseases, in which conditions there is rapid oxidation and metabolism of the albuminates and fats of the tissues. These elements enter into the organic structures of the body, while the carbohydrates are only found in some of the fluids. Milk, then, when used for a complete food in fever cases, has for its advantage the

fact that it contains more albuminates, fats and water than would be suitable for those in full health, but no more than is essential to act as restorative agents in the wasting diseases. Water, the natural solvent entering into the composition of every liquid of the body, is withdrawn from the tissues very rapidly in the various fevers by the abnormal oxidation, evaporation, and elimination to which it is subjected. Milk, with its eighty-seven per cent. water, is not burdened with more of nature's solvent than is required by the demands of the tissues in the varied diseases where its efficacy has oft been proven.

The Milk and Whey Cures. The so-called milk cure has been systematically applied to the treatment of many chronic maladies. Karell, of St. Petersburg, has been one of the chief advocates of an exclusively milk diet, and S. Weir Mitchell has in a measure adopted his views and extended their application. The following are the diseases in which an exclusive milk diet has been found of value:

"Dropsies of all kinds, cardiac, renal and hepatic; obstinate intestinal neuralgias; incorrigible dyspepsias with grave disturbances of nutrition; hepatic disorders, such as hyperemia, simple hypertrophy and fatty liver; asthma, with the consequence of pulmonary catarrh and emphysema; hysterical and hypochondriacal states associated with serious disturbances of nutrition; and especially in disorders of nutrition dependent on latent catarrhs of the stomach and intestine." Karell believes that milk given methodically produces its curative effects by acting as a regulator of nutrition; and he maintains that it is highly beneficial, not only in cases already enumerated, but also in gouty and rheumatic affections, in organic disease of the heart and advanced renal degeneration, and especially in degeneration of the arteries. Both Karell and Mitchell believe that the milk should be well skimmed and not over twelve hours old. The

quantity taken at first should be small, the average being four ounces every two or three hours. It should be taken slowly, in smal mouthfuls, that the saliva may thoroughly mix with it. Experience shows that taken in this way it will be thoroughly digested, whereas drunk rapidly it would cause indigestion. The milk should be taken warm and should never be boiled except in cases of obstinate diarrhea. If the milk is well digested, the dose is slowly increased. When the patient objects to the taste, Mitchell allows it to be flavored with tea, coffee, caramel, or salt. With the milk treatment constipation is considered by Karell to be a natural consequence, and a good sign that the milk is absorbed. This condition is easily remedied by a simple enema, or a small dose of castor-oil or rhubarb, and in obstinate cases a little coffee is given in the morning and stewed prunes or baked apples at 4 P. M. According to clinical reports flatulence is, as a rule, entirely relieved by the milk-diet, properly administered; and when this symptom does appear, it is said to be caused by imperfect skimming of the milk, or to its being taken in too large quantities. Mitchell suggests the importance of combining rest with the milk-treatment, especially at the commencement, as the patients lose weight at first and feel weak on account of the small amount taken. As the doses are increased, the weight also increases, and more activity is prescribed.

The so-called whey cure is used to quite an extent in many of the German and Swiss spas. This consists in drinking the whey either alone or combined with the mineral waters. Whey differs from skim-milk chiefly in the absence of the casein, and it is found preferable for patients who find casein indigestible. The whey treatment is advised for most forms of catarrhal disease of a chronic nature, but is not given as an exclusive diet cure. Animal food is allowed in reduced quantities and the amount of fruit and vegetables is increased beyond the customary limit.

Gastro Enteric Infection. The distribution of the specific infectious diseases through milk as a carrier of infection has been clearly demonstrated by scores of observers, but there are other germs of a decidedly different class, that also claim our attention. They are called the saprophytic, toxicogenic bacteria, and they are accountable for milk poisoning, more enphoniously called by Vaughan galactotoxismus. The poisons generated by these germs are designated galactotoxicons, and they are believed to be largely responsible for a large per cent. of the infantile mortality, due to diarrheas of one form or another. These diarrheas are not caused by one specific germ, but by many bacteria, that grow readily in milk, and elaborate poisons capable of engendering serious leisions.

Flugge has made a most valuable contribution to our knowledge of bacteria in milk, especially of the anerobic peptonizing varieties. Some cultures of each kind were found to be exceedingly poisonous, as shown by repeated experiments upon mice, guinea-pigs, and puppies. As a result of Vaughan's experiments, he concludes "That it is by no means certain that it is well to feed children upon milk peptonized by the agency of bacteria, or by means of the digestive ferments, for in testing the nutritive value of peptones on the lower animals and on both healthy and sick men, severe intestinal irritation has been induced."

In the gastro-enteric diseases, including typhoid fever, milk has been the chief diet for many years, and still retains the foremost position for that office. In the infection called cholera infantum, it is generally agreed that milk is contra-indicated, even though it be breast-milk, for the first two or three days of the disease. Whey, barley and albumen water are substituted, not only because milk is not able to be digested, but for the reason that the undigested casein becomes a fruitful cul-

ture medium to aid the development of the germs already in the intestine. The use of milk in typhoid fever is not believed in by some of the later writers, for the reason just noted. Liebermeister advises that the diet during typhoid fever should consist of fruit soup. The fruit soup of the Germans is a sort of gruel made by boiling for a long time such fruits as dried apples, prunes, figs, raisins, etc. Kellogg suggests the use of the juice of fresh fruits, such as unfermented wine, pure apple-juice, peach-juice, raspberry-juice and similar preparations.

The uses of kumyss, matzoon, peptonized and malted milk have been thoroughly tested and found to be of superior merit in the dietetics of many diseases, but the fear of abusing your patience precludes further reference. Suffice it to say in conclusion that milk when properly produced, cared for, and consumed, is the king of foods.

REMINISCENCES OF MEDICAL MEN.

MINER C. HAZEN, M.D.,

HADDAM.

Old men are not expected to know as much as young ones—yet their memory extends back further, and experience, that best and most expensive teacher, has imparted to them more lessons. The old adage—"Old men tell what they have done, young men what they do and fools what they will do," might be modified so as to read "Old men tell what they know, young men what they think they know and fools have very positive theories." Young men of to-day have greater advantages in our profession than those of half a century ago and the public demands —and has the right to—a more thorough preparation before the young man assumes the grave responsibilities of the physician. The twentieth century young men are to be congratulated on what they know and may know and yet the old man who can enjoy the pleasures of retrospect and the good things of the present is he who has had reserved for him at the last the best wine of the feast.

The boy who gets on your knee says "tell me a story," and if you begin a yarn which he recognizes as part of his experience he says "no not about me." I will be frank to say I am not going to speak of you who I am privileged to speak to—but of the silent but not forgotten men of a little while ago. I could say pleasant things about living members of the Middlesex County Medical Association but they can speak for themselves. I have been favored in knowing and counting as my friends many good men, especially in our profession. My chum at the University of Michigan was Wm. Warren Greene, the most brilliant man I ever knew and in every

aspect a man. He was the most famous surgeon Maine, his native State, ever produced—was Professor of Surgery at Bowdoin, etc. He was petted and received everywhere the most flattering attention. He went with a celebrated New York surgeon to Europe, was while there treated with marked attention—dined with the Prince of Wales—died on his passage home of Bright's Disease, and was buried at sea. Hard work and convivial habits hastened him to a premature end.

I took my first course of lectures at the Berkshire Med. Institution—Henry H. Childs was then at the head of the college and was a noted character of his time. He was a short, stout, bustling little man and very positive in his opinions. His principal remedies were calomel, opium, and turpentine. He used to say he cured a case of hydrophobia—"Gave him calomel—gentlemen—in dram doses!" He lectured one day on quinsy. The sovereign means of cure he recommended was—emeties —repeated—emetics—that and nothing more.

The succeeding day in quizzing the class he called me out. Hazen, said he, how would you treat a case of quinsy? I promptly replied "I should administer to the patient an emetic." "And if that didn't cure him what next?" "Then," I replied, "I should give another emetic." "I have no doubt, Mr. Hazen," he said, "you would treat a case of quinsy as well as anybody." His son, Timothy, who had just returned from Paris with his French wife and French notions, was the Professor of Anatomy. He was a keen, dry wit. One day he came in to lecture on the dry bones. A wag had opened the jaws of the skeleton that hung there and inserted a fresh paper of fine cut tobacco.

Tim came in smiling as was his wont and found an unusually smiling audience. He immediately proceeded to business—"Gentlemen, the bones of the head will be the subject of our lecture to-day," and glancing at the grim grinning skeleton saw the joke—bowed to the class

—liberated the paper from the bones—took a small quid from the paper, tucked it into his mouth, said—"thank you"—the boys roared and cheered—and he went on as it nothing unusual had occurred. Tim went to New York where he filled the same chair at the College of Physicians & Surgeons. He became very intemperate and ended his own life at a hotel in Norwich a few years later.

I came to Middlesex County in 1855, first met this Society one April day, having driven with Dr. Nye through the mud from Middletown—was admitted to that inner chamber in the house of Sam'l R. Brainard and silently enjoyed the meeting, conducted by such men as Hutchinson, Woodward, Casey, Hubbard, Turner, Worthington, Williams, King, Gilbert, Baker, Shepherd, Nye, and others.

There were some Doctors in Middletown and other parts of the County who were not frequent attendants at our meetings and a few not members. Among these was Dr. Boyle, an eccentric, jolly Irish physician in Middletown. He was a gentleman—well educated in the old country, graduate of Dublin University, very popular, especially among his own people, and an excellent practitioner, leaning toward heroic methods.

On one occasion we both were called to see a boy in a fit. On arriving at the house I found Boyle bending over the little fellow—who was in a comatose condition—trying to administer a white powder with a spoon. I looked on and ventured to inquire what he was giving him. "Calomel," said he, "in teaspoonful doses." Of course I did not interfere nor suggest any further medication. The lad was playing in the streets next day. Dr. Boyle died by his own hands in a fit of mania a potu. He was never married. According to my observation in regard to stimulants no class of men are so likely to be deceived by their use as physicians. The good fellowship and conviviality of social life are apparently increased or

enlivened by wine that gladdens the heart of man—and yet luxury of all kinds though soft and gentle in its approach is "more perilous to youth than storms or quicksands, poverty or chains." Often stimulants are in moderation beneficial to men of years, but I have seen elderly men who had not been in the habit of using alcohol in youth become too fond of it. How common and easy it is for us to recommend what is pretty sure to be agreeable to our patient especially wine or other fermented drink at meals—Often it is the thing to do—but oftener the thing that should not be done. The most abominable and vile stuff ever used among this class of drinks is Lager Beer. It is impure and pernicious in its effects every time—a fruitful cause of diseases of the kidneys.

Dr. Joseph Barrett, another eccentric physician of Middletown, is well remembered by the older inhabitants. He too was a bachelor. He lived in a dark, dingy upper room near Collins' drug store. His office was his living and sleeping room and was a "Curiosity Shop," bugs, rocks, illustrating mineralogical and geological theories, old books, medicines, instruments, etc., etc.

The doctor was not averse to business, but never put himself in the way of getting or keeping it, and in his office he had hardly the accommodation of a seat for a customer. He had notwithstanding some friends and patrons who thought very highly of his skill. Dr. Barrett did not lack the one characteristic of an Englishman —assurance—he was always right—and the man who differed with him was "an ignoramus—an old fool sir."

He would stand gazing into the street seeing nothing, or stalk along the walk in the same abstracted manner or sometimes apparently studying the stones of the pavement, noticing nobody unless first addressed—then courteously giving them his attention. Dr. John Fiske

has an interesting article in the March Atlantic which graphically and pleasantly pictures this old "Crank and his Crotchets."

Dr. Wm. B. Casey, a prominent physician in Middletown in his day, was a born gentleman, and an ideal counsellor. He was well equipped with a stock of knowledge and skill, which he could call to account when the occasion required. He never had any selfish end in view—no axe to grind. I have met physicians in the sick room—whose first business seemed to be to make themselves solid with the attendants and patient by showing off their superior wisdom and skill—and I have admired the ingenuity of the methods used to make the impression. Others in a perfunctory manner after looking over the case proceed frankly to say what they should do in a similar case without an inquiry as to what the attendant thinks or has done for his patient. Dr. Casey's method was to look over the case carefully, inquire what had been done and what should be done—then the great end of the consultation, the good of the patient, was seriously considered and measures taken to put in operation proper remedies and means to this end.

I remember very pleasantly the encouragement he gave me in one instance. I called him to see a very interesting case of melena. The patient, a young girl of sixteen, was very sick, hemorrhages occurring from every part of the body. I also had two severe cases of dysentery in the vicinity and asked him in to see them. After visiting them all he said, "Doctor, you have three very sick patients and will be likely to have more than one funeral before you are through, but I think you are treating them properly and I have little to suggest." All the cases recovered. A few days ago I was in Middletown and met a brother of the young lady who had the hemorrhages and he spoke of that illness of his sister,

assuring me that the family always remembered and frequently spoke of me with gratitude for this service. After more than forty years it is pleasant to receive such approval.

Dr. I. Hutchinson was a counsellor and friend of whom I have only the pleasantest memories.

Dr. Charles Woodward was a courteous and wise counsellor. I once called him in Haddam to a case of typhoid. "The man is very ill," he said, "but you are treating him just as I would." A few years before, I remembered Dr. Woodward saying in one of our City Medical Meetings, "I have just lost a typhoid patient. I don't believe I ought to. I did not give him quinine enought." His sheet anchor in typhoid was quinine and his treatment of this disease was in general right.

On his way returning home I asked him to go in and see an old lady eighty years old in Higganum who was convalescing from typhoid but was very much depressed and seemed determined to die. I asked him to give her a jog on. He went in, looked at her a little; walked to and fro across the chamber with his hands behind him, his head bowed over as was his custom to do. He finally said to her, "Well, Miss Brainard, you expect to be around again very soon, don't you?" "Oh, no, Doctor, I shall never be any better." He suddenly faced her and said, "Why, Miss Brainard, you will be terribly disappointed," and turning on his heel left the room. A smile lit up my patient's face and hope took place of despair. She made a rapid recovery and realized her terrible disappointment.

Dr. B. H. Catlin who practiced in Haddam seventeen years, visited the early scenes of his labors after he had completed his fifty years of service. He stayed with me one night and had many interesting experiences to tell. One incident I will relate. He was in attendance in a confinement case. There were three daughters in the

family and one son. A boy was desired to balance things properly, but there came—twin daughters. The father was greatly disappointed and complained of the good Providence and he refused to be reconciled. The next and last child was a boy. He was a wild, rather unmanageable lad and finally joined affinity with John Brown in his Harper's Ferry raid. As a matter of history he and Brown were hung. I need not say the grief of the aged couple in Haddam was very great. The twin daughters grew to be beautiful, accomplished women. One married a Governor of Indiana and the second was the support and comfort of her father and mother in their last feeble declining days.

John Brown was hung at high noon December 2, 1859. On that day I was attending a case of confinement near the Baptist church. I was one of the trustees of the society. Elijah J. Gibbons was the sexton. Lij. appeared at the house where I was retained a little before noon and said it had been agreed among several of the sextons of the churches—the trustees consenting—that the bells should be tolled at the hour of execution. He asked if I objected and I said "No."

At twelve the bells of several of the churches tolled—but there were interruptions. I went up to the church and found Lawyer Waldo P. Vinal there, violently remonstrating with the sexton and threatening him if he continued. They had almost a hand to hand encounter. Vinal was a large man and Gibbons though not so large was not lacking in sand. He insisted on his right and persisted in ringing the bell when he could. I stood by giving what moral support I could and not averse to having a hand in the scrimmage. The newspapers hauled me over the coals severely for the part I took in it. Capt. Gibbons went to the war. At the head of his men at Gettysburg he was struck by a Minie ball and

killed—only one of the more than thirty thousand brave men lost in that great fight.

Scraps of history have their value. Thomas Carlyle says: "The History of the World is the biography of its great men." Who the great men or who the little men are may not now be clear, but every man who has done or may do his part is more or less entitled to credit in contributing to the good time coming.

It is easy for men in our noble profession to do good service to their fellow men. The great Physician after the feast on the night of the betrayel rebuked his disciples for their ambition to be great and when he girded himself with a towel and did the menial service for them which they had refused to do, he exalted service. Things apparently too small for our notice or even to be remembered by ourselves may to others be of great importance. I was riding in the trolley from a station in Middletown a short time ago and in the car was a man I had known forty years ago. He was then a poor man but had been successful. He did not seem to recognize me. I spoke to him and said: "Mr. ——, you seem to have forgotten me?" He said: "I guess not. I shall not forget you right away. You did me a great favor once." He left the car and I saw him no more. I don't know and don't care to know what I ever did for the man—no doubt it was some trifling thing, but he remembers it—that is sufficient for me. So we may have forgotten some good things we have been privileged to do, and possibly may think too much of our shortcomings. At all events we are sure there are no mistakes in the book where our record is kept, and when our work is done—when night comes on—we are certain that the morning will succeed. Then I hope we may be surprised by the soft, gentle words of the just and Merciful Judge saying: "Inasmuch as ye have done it unto one the least of these ye have done it unto me."

SURGICAL PAPERS.

REPORT ON THE PROGRESS OF SURGERY.

M. M. Johnson, B. Ph., M.D.,

HARTFORD.

The scope of surgery has become so broad that time and space would not permit me to note the progress made in the vast field of increasing activity. The surgeon of to-day is so alert, taxing all his inventive skill to devise a new method which will give an additional safeguard to those who require his services, and reduce the mortality to a minimum.

The principles of asepsis and antisepsis are now well understood and rationally carried out by all surgeons of standing.

The most marked progress in surgery is the improved technique, by which the operative procedure may be performed with celerity which will not tax the vitality of the patient. It is in these lines that I deem it prudent to note the progress made.

CARE OF THE HANDS.

Surgeons are about evenly divided as to the necessity of wearing gloves. Mikuliez claims noticeable improvement in his results since he wears them; it renders his technique almost perfect.

Quenu finds the ordinary white gloves worn by servants serve all desired ends. Howard Kelly is a strong advocate of the use of gloves. He has a preference for rubber gauze gloves, and finger condums. Dr. J. William S. White found the employment of sterilized gauze before the mouth to prevent infection from coughing and

speaking, desirable. He never examines suppurating cases before operating. He divides his wards into suppurating and non-suppurating cases, and all suppurating cases are operated on by his assistant. The surgeon should not make rectal or vaginal examinations before serious operations. Immediately after such examinations the hands should be thoroughly sterilized. Scrub with soap and water, wash in alcohol, then with permanganate of potash, followed by bisulphate of soda.

The greatest care should be given to the periunguinal spaces. After thorough sterilization they are painted with Tincture of Iodine. But few people should be admitted to the operating-room . Major operations should not be performed in large ampitheaters, speaking should be avoided as much as possible, while operating.

A NEW FORM OF INCISION IN LAPAROTOMY.

DR. LENNANDER.

It consists in a vertical incision of the anterior layer of the sheath of the rectus, and free exposure, without incision of this muscle, the outer margin of which is pushed inwards in the lateral operation, and the inner margin outwards in median laparotomy. The posterior layer of the sheath thus exposed is incised in the same direction, and to the same extent as the wound in the skin.

In closing the abdominal wound four rows of sutures are applied, one to the incision in the peritoneum and the posterior layer of the sheath, the second for fixing the replaced margin of the rectus to the corresponding margin of the sheath, the third for closing the wound, in the anterior layer of the sheath, and the last for bringing together the edges of the skin.

He gives four advantages:

(1). Free access.

(2). No division of nerves.

(3). Between the sutured wound in the peritoneum and the posterior layer of the sheath and that of the anterior layer of the sheath of the rectus is interposed a thick layer of undivided muscle, the full blood-supply of which is maintained, as the inferior epigastric artery is not cut through in this operation.

(4). Less risk of localized necrosis.

In median laparotomy, the incision is made not exactly in the middle line, but through the sheath of the rectus at a distance of from one half to two inches to the right or left of the linea alba. The rectus muscle is then passed outwards and the abdomen opened as in lateral operation, by incision of the posterior layer of the sheath. The main advantage is the preservation of the linea alba with its decussating tendinous fibers.

ABDOMINAL INCISIONS.

DR. GEO. WOOLSEY.

Annals of Surgery, January, 1898.

He objects to the vertical incision in the semilunar line for appendicitis, because it is peculiarly apt to be followed by hernia. It divides some of the nerves which supply the rectus, and thus leads to atrophy of the muscle, and consequently to weakening of the abdominal wall. This incision should be used only for pus cases. The saving of life far outweighs future consequences of the incision. Woolsey has had the best satisfaction with oblique incision.

A SUGGESTION TO BE USED IN ABDOMINAL SURGERY.

H. LOHEREK.

After the abdominal incision has been made, it frequently occurs that from the constant introduction and manipulation of the fingers through the abdominal incision, the peritoneum becomes separated to a greater

or less degree, from the muscular tissue. He also advises a stout ligature to be introduced through the center on either side of the incision about half an inch from the margin of the wound, this ligature being first tied snugly, and a loop of from four to six inches allowed to remain beyond the first knot. Two results are:

(1). Prevent separation of peritoneum.

(2). The ligature retractors are less injurious than the ordinary metal retractors.

The ligatures are removed after the operation.

ABDOMINAL DRAINAGE.

DeLangeniere.

We should drain the cavity in the same manner as a spirit-lamp is drained by a wick. He takes a perforated wick tube and passes into it a skein of absorbent cotton, which fits tightly the interior of the tube, and is projected from either end of it, the projecting ends being frayed out. The cotton can be removed whenever necessary without removing the tube. The tube should never remain in place more than thirty-six hours. The tubes are from eight to ten inches in length and fifteen to twenty m.m. in diameter.

ABDOMINAL DRAINAGE.

Dr. Burrage.

He employs the posture method of draining the peritoneal cavity after abdominal operations. This method (originally proposed by Clark, of Johns Hopkins,) consists in flooding the peritoneal cavity with sterile salt solution, wiping it dry with gauze, and then introducing from one to two pints of sterile salt solution. The abdomen is then closed and the foot of the bed raised eighteen inches, thus favoring the flow of fluid from the pelvis to the diaphragm, where absorption of liquids con-

tained in this great lymph sac proceeds with the greatest rapidity. By the use of this method it is possible in many cases to close the abdomen under circumstances in which drainage is usually considered necessary. (Twenty-seven patients, all recovered).

A MODIFIED OPERATION FOR THE RADICAL CURE OF INGUINAL HERNIA.

JOHN B. DEAVER.

A modified operation for the radical cure of Inguinal Hernia.

He suggests that the defects in the operations of Halsted and Bassini are that they do not correct the tendency to recurrence in the external inguinal fossa. He suggests that the sac should be puckered up and carried within the abdominal cavity, after the manner of Macewen, anchoring it at the site of the internal ring, and this can be carried out with much greater accuracy, when the inguinal canal is left open.

The operation as performed by Deaver consists in dividing the anterior wall of the canal, and thus exposing the hernia sac. The sac is separated and a small opening made into it. The other procedure may not be necessary when the contents of the sac are reducible. The sac is separated from the circumference of the abdominal aspect of the internal ring. It is folded upward, delivered within the abdomen and anchored by means of a suture made to traverse the abdominal walls, which suture is tied upon the aponeurosis of the external oblique. The cord is held aside and the walls of the canal closed with interrupted silver wire sutures, introduced by the Reverdin needle.

Commencing below and suturing upward, the aponeurosis, anterior sheath of the rectus, rectus, triangular ligament of the abdominal walls, conjoined tendon,

transversalis fascia, and finally Poupart's ligament are transfixed with a needle and the suture placed.

The second suture traverses the aponeurosis, conjoined tendon, transversalis fascia, and Poupart's ligament; the third the aponeurosis, the fibers of the internal oblique, transversalis, the transversalis fascia, and Poupart's ligament; the fourth and fifth, the same structures as the third suture.

Before these are fixed the edges of the aponeurosis are opposed by continuous kangaroo suture, sufficient space being allowed at the upper part of the canal for the exit of the cord. The interrupted silver wire sutures are now tied, the cord placed in contact with the aponeurosis, the skin and fascia brought together by either a subcutaneous silver wire suture or interrupted worm-gut suture.

TRANSPLANTATION OF THE RECTUS MUSCLE IN INGUINAL HERNIA IN WHICH THE CONJOINED TENDON IS OBLITERATED.

Dr. Jos. C. Bloodgood.

The operator performs a modification of Halsted's operation in these cases. After the sac has been excised, the peritoneal cavity is closed and the internal oblique muscle is divided, and the rectus exposed and transplanted. At this stage of the operation the deep sutures are inserted. The rectus forms the lower angle of the wound and strengthens the entire wound up to the position of the transplanted cord.

The conjoined tendon may be congenitally very thin, but it is more apt to be acquired. The important point to be recognized at the operation is that the conjoined tendon has nearly disappeared or is narrow and attenuated, that Hesselbach's triangle has thus lost its strongest support.

PREVENTION OF HERNIA AFTER CELIOTOMY.

DR. VOLKWRICK.

He prefers an incision through either rectus muscle, not through the linea alba, the wound closed by layers of interrupted sutures. Then he gives the layers which are to be included in each suture. The operations on the lateral portions of the abdomen, the muscular and tendinous structures, should be separated in the direction of their fibres, and not divided across as is usually done.

In the lower part of the lateral region, the incision should have a direction from above downward and inward, that is parallel to the fibres of the external oblique, which are then separated along their course.

The writer thinks it is very doubtful if the operation of Bassini or Macewen, as modified by Deaver are really an improvement. He complicates the technique without strengthening the abdominal wall. The burying of silver wire sutures is bad surgery.

OPERATIONS FOR HEMORRHOIDS.

DR. T. TEAL.

The operation which he now performs is as follows:

He places the patient in the lithotomy position and keeps him in it, by manacles. He dilates the sphincter and grasps the most prominent hemorrhoid at each extremity by a volsella forceps, and holds it during the operation.

He excises with curved scissors, marking out and partly dissecting a shallow flap, first on the mucous membrane side, and then on the cutanous side. He next excises the hemorroidal mass, ties any pulsating blood vessels, and brings the two sides of the cut together by a continuous suture, commencing to suture about one and one fourth inches from the end, passing it rather deeply

so as to bring the whole surface of the wound together, and to control oozing, and terminating the suture about one half inch from the end. The suture is of catgut, and is secured temporarily by clip forceps. Then he removes the clips, ties the sutures and cuts them, leaving about ten protruding from either end.

TREATMENT OF HEMORRHOIDS BY SUTURE.

Dr. W. L. Thomas.

The sphincter dilated, the piles are clamped, the clamp being applied in the long axis of the bowel. The bulk of the pile is cut away, leaving a small stump standing on the clamps. The treatment of this is the essential feature. A piece of catgut, not too fine, about a foot in length with a domestic needle at each end, is used for a suture.

Commencing at the top of the stump one needle is passed through until there is one half the length of the suture on each side, with its own needle attached. A reef knot is tied on the stump, and the needle that is on the right is brought over to the left and passed through the stump lower down and back again to the right. The needle that is on the left is taken over to the right and passed through the stump back to the left immediately adjoining the previous one. A reef knot is again tied, and so on to the end of the stump, making five or six crossings to the inch. This method of sutures brings the cut edges of the mucous membrane tightly together and its advantage over a continuous suture is apparent, each cross and knot making each segment, independent of the next.

THE TREATMENT OF HEMORRHOIDS BY PLASTIC METHOD.

Dr. H. T. Byford.

The sphincter dilated, rectum washed, clamp such of the hemorrhoids and redundant tissues, with T

shaped forceps, as are to be removed, in order to be able to judge at the outset, how much anal mucous membrane will be left after the excision. The forceps are as a rule, so placed that when the hemorrhoids are excised and sewed, the lines of sutures will be longitudinal or parallel to the long axis of the rectum. Plenty of mucous membrane must be saved to line the anus, but if the hemorrhoids are too abundant to allow of this, then a portion of them should be removed in a transverse or diagonal direction.

A NEW OPERATIVE TREATMENT FOR HEMORRHOIDS.

Dr. G. K. Sims.

Ligature the piles in the usual way, then cut them off close to the ligature. The cut edges of the mucous membrane are then sewed together with catgut over the stumps , so that the raw surface is entirely covered. By this means the risk of suppuration and suffering are reduced to a minimum.

THE OPERATIVE TREATMENT OF HEMORRHOIDS.

Dr. Lynn Parker.

He is in favor of the operation by clamp and cautery. He mentions the lithotomy position, preliminary forcible dilatation, incision of mucous membrane at the anal margin as far as the end of the mass to be removed. After the removal of the stump it may be necessary in some instances to apply a ligature to the bleeding point.

GALVANIC RADICAL TREATMENT FOR HYPERTROPHY OF THE PROSTATE.

Dr. Willy Meyer.

The technique of the operation is as follows:

Irrigate and empty the bladder. Anesthetise the posterior urethra by means of eucain or cocain. One

assistant is directed to give his active attention to the cooling apparatus, seeing that the outward flow of water never stops. The current is broken and the instrument is introduced. Bottini burns three grooves at one sitting; a slight one towards the symphisis, one towards the rectum and a third through the longest lobe of the prostate. In order to burn the lobe towards the symphisis raise the handle of the instrument and pull it forward, until we feel the resistance. After it has entered the bladder, have the cooling apparatus ready and turn on the current.

Wait fifteen seconds for the knife to get red-hot, and then turn the screw, reading the scale to note the progress made. When the groove has been burned return the male blade into the female blade, increasing the current slightly while doing so.

The current is turned off and the beak of the instrument is turned downwards and forwards so as to avoid injury to the bladder.

The prostate and the two grooves are burned, the current is turned off and the instrument is withdrawn. The patient can urinate immediately after the operation.

PROSTATECTOMY.

DR LYNN PARKER.

I have the following modifications to this (Alexander's) operation to propose: Namely, that a lithotomy be performed, entering the peritoneum just above the vesical fold, by an incision large enough to permit the operator with one hand to press the enlarged prostate well into the peritoneum without opening the bladder.

Then the rest of the operation will be performed in the manner already described.

TOTAL REMOVAL OF THE BLADDER.

TREFFIER AND DUJARIER.

The first case on record was on a man on whom the operation was successfully performed. He suffered from

an extensive epithelioma. The man subsequently wore a sort of reservoir, which drained him with ease. The best incision in this case is the median incision, with a horizontal cut extending from one external inguinal ring to the other and dividing the rectus muele. The peritoneum is easily separated from the anterior surface of the bladder, but adheres to the apex. After separation of the urethra the bladder can be easily separated from behind and on a level with the prostate gland. The bladder is enucleated as the uterus is turned out in a hysterectomy, the liberated portions being brought into the wound. The ureters should at once be divided. They should be secured along with their blood-supply, and divided above the clamps. After removal of the bladder the blood-vessels are ligated, and a catheter is passed into each ureter.

Before dividing the neck of the bladder a curved clamp is fastened on it to prevent hemorrhage. After removal of the viscus the hemorrhage is arrested by the ligature and cautery, care being taken to destroy the mucous membrane of the vesical neck, in order to prevent infusion of the wound. In the female the ureters should be implanted in the vagina. In the male it is better to implant them in the large intestine, but not in the rectum. The sigmoid flexure is the best place in which to implant them.

ONE HUNDRED OPERATIONS FOR STONE IN THE BLADDER.

DR. P. T. FREYER.

One of the most essential elements of success in the operation is the use of proper instruments, the blades being fully fenestrated instead of non-fenestrated, as they were in the original Bigelow instrument.

STONE IN THE BLADDER.

DR. E. L. KEYES.

When the stone complicates enlarged prostate, if the condition of the bladder is such that with the stone ab-

sent no operation would be called for, then the question of operation is to be determined by deciding whether the obstructive nature of the prostatic hypertrophy, the size of the bar, the depth of the fond, the irritability of the prostatic umbra and the degree to which it resents instrumental interference, be sufficiently marked to make the operation impossible, or to make it possible at the expense of leaving the patient's symptoms worse than they were before; if such conditions do maintain, the stone should be removed by a knife. The suprapubic route should be chosen.

CANCER OF THE BLADDER.

Dr. Rotter.

He removed the tumor, and part of the bladder, with the whole cyst, which was clearly a dilated urachus. The peritoneal cavity opened, the hole made in the bladder was two and three fourths inches long. The mucous membrane and the serous investment were sutured separately, the abdominal wall closed in three layers. No catheter was left in the bladder. The patient was able to pass water naturally after the operation.

RUPTURE OF THE BLADDER.

T. F. Mitchell reports a case of rupture in which the continuous bath was used. The patient was first treated by suturing the bladder wall, and draining the prevesical space through a median cut and through incisions in each inguinal region. The next day the patient was placed in a bath, at a temperature of one hundred degrees, F., and remained there nearly constantly for forty days. The patient began to improve as soon as placed in the bath. The condition of toxemia due to absorption from urea soon subsided.

DISEASE OF THE BLADDER.

C. M. MOULLIN.

Suprapubic cystotomy is the only method of treatment, which holds out any hope of cure, or at least any hope of marked relief.

PLASTIC SURGERY OF THE CERVIX.

THE TECHNIQUE OF NEWMAN'S NEW METHOD.

H. P. NEWMAN.

After the usual preparatory treatment, Sim's position, cervix drawn down, the uterus was curetted. The bullet forceps were then reversed and introduced into the cervix, and traction made from within. The cervix was then transfixed with a knife, and a clean cut made from above downward in the anterior lip. The posterior lip was transfixed and cut in a similar manner and the plug of intervening tissue removed with curved scissors. The flaps properly made, they fell together and covered the portion removed, assuming the appearance of the normal cervix. Sutures were then introduced in four groups, anterior, posterior and lateral.

A tampon was introduced, and retained for twelve days. The sutures were removed in two weeks. He calls the operation Tracheoplasty.

DR. MATHEW MANN'S SURGICAL TREATMENT OF THE UNREDUCIBLE RETROFLECTION OF THE PREGNANT UTERUS.

The uterus should be replaced by laparotomy. If the uterus be so large as to completely fill the pelvis, replacement through the vaginal wall; not that the uterus is too large to be forced through the pelvic brim but because when pushed up, nothing can enter from above to replace it. The moment pressure is withdrawn from below, atmospheric pressure forces it again into the old

position. Adhesions may be an insuparable bar to reposition.

FIBROIDS.

F. HARTMAN.

He maintains that the best treatment for fibroids of the uterus is to cut off the chief blood-supply of the uterus. The uterine and not the ovarian arteries ought to be severed. Through a vaginal incision a lateral incision is made on each side of the usual circular cut around the cervix and prolonged for about ten m.m. down to the vagina. The cervix is freed one half inch by seissors, then the valve of a speculum is pressed against the corresponding side of the vagina. This exposes the uterine side of the pedicle, not to the broad ligament, but to the band of parametric tissue, which accompanies the uterine artery. This ligament is denuded, drawn down and tightly ligated. If it be thick, two ligatures should be applied. The knot must be tied very firmly. The ligatures are cut short, closing the wound.

DR. A. V. WENHEL AND W. O. BAILEY'S METHOD.

For several years they have made it a rule to attempt a conservative operation upon every case of multiple uterine fibroids, excepting those associated with an organ entirely disorganized and they advise the early conservative removal of even small multiple tumors, in every case, when observations show any growth, particularly if any tendency to extend into the ligaments is manifested, because the sooner it is attended to the easier the operation and the better the results.

TECHNIQUE OF EXTIRPATION.

DR. E. BUMM.

His method consists in catching from the abdominal opening, the ligaments with forceps and cutting them and later ligature each bundle of vessels

TECHNIQUE OF INTRAPERITONEAL OPERATION FOR REMOVAL OF THE UTERUS.

Dr. N. N. Fenomenoa.

His modifications consist:

(1) In disinfecting the uterus with water vapors at one hundred degrees Centigrade

2) To operate on a bloodless field and to have an access to the deeper parts. In order to grasp the uterus or the tumor with strong forceps after the abdomen has been opened, he pulls the uterus upwards and downwards respectively if the operation is performed in Trendelenburg's position. By this pulling he tries to make for the uterus a big path accessible to the fingers and eyes. Then he ligates the vessels, the spermatic and urinary arteries. His modifications are directed towards finding the uterine artery and ligate only this artery and not as it is usually done, "en masse." He does it as follows:

After putting a double ligature upon the round ligament one and one half or two inches from its beginning, he divides the ligament in the central part. The central end is either ligated again or clasped in order to prevent hemorrhage from the sphincter artery. He cuts not only the peritoneal muscles of the ligament, but the connective tissue under the ligament. The incision is then made in the anterior wall of the broad ligament, parallel to its upper border and the finger is put in the connective tissue, always keeping to the anterior part of the ligament, always pulling the divided ligature so as to pull the flap of the anterior portion of the ligament forward. When we reach deep enough and then slightly pull the uterus, we will expose to our view the bundle of uterine vessels. In this bundle the uterine artery can easily be distinguished, as it is thickened owing to neoplasm. By pressing the veins near the uterus, the artery is more visible, and we usually ligature the artery uterina propria,

and below the one branching into the uterine artery, as we strive not to entirely stop the circulation but only to interfere with the nutrition. Then he ligates the Spermatic artery.

VAGINAL OPERATION.

Dr. T. H. Wilson.

Through the vaginal incision the adnexa may be drawn down and examined, adhesions of the ovaries separated, and the tubes and ovaries removed or replaced, easier than by any other method. Even small subperitoneal myomata, if pedunculated may be ligated or removed and the peritoneum closed over. Also small ovarian and parovarian cystomata are easily removed. He disapproves of vaginal fixation for retroversion except in cases past the child-bearing period, or for the control of hemorrhage impossible by other means.

As advantages of vaginal colprotomy he claims the absence of risk of ventral hernia, absence of the distressing thirst so common even after exploratory abdominal incision, and speedy convalescence.

A NEW FORCEPS FOR INTESTINAL ANASTOMOSIS.

Dr. Ernest Le Place.

Annals of Surgery, March, 1899.

The many shortcomings of the present mechanical means for facilitating intestinal anastomosis, have resulted in a general tendency to abandon them in favor of the safer method, unaided by any artificial means. The necessity for rapidity and accuracy in suturing while performing the various operations, has led us to devise a forcep which presents the following characteristics:

(1). It consists of two rings introduced into the intestines to be anastomosed, and acts as safety to the parts while suturing them.

(2). The forceps being separable into two halves, can be gently withdrawn from a small aperture still unsutured, and the anastomosis is completed by adding one or two sutures. This device adds greatly to the rapidity and accuracy of the suturing.

INTRALIGAMENTOUS CYSTS.

Dr. C. K. Flemming.

He recommends the following operation:

Immediately after opening the abdomen the ovarian artery on the tumor side is ligated in the infundibulic pelvic ligament. If the cyst is a very large one, a part of its contents should be withdrawn and the puncture closed by a pair of heavy forceps. The broad ligament on the free side is now cut between two ligatures down to a point near the internal os. The anterior flaps containing the bladder must now be made, and should consist of enough peritoneum from the anterior surface of the uterus to cover the stump of the cervix. A posterior flap of peritoneum, such as is recommended, Flemming never makes, even in ordinary abdominal hysterectomies, as it simply consumes time and offers no apparent real advantage over the single anterior flaps. After completing this step the uterine artery is found and ligated in the usual way. The uterus should now be amputated above the supravaginal junction and the uterine artery either ligated or clamped. Then after elevating the amputated body of the uterus, the first and second fingers are inserted between the folds of the broad ligament, the cyst is rapidly enucleated from below and upward, and the whole mass finally cut away. There is absolutely no bleeding, as the arteries are all under control. The final step in the operation consists in trimming the broad ligament, leaving only sufficient peritoneum to make a good

flap over the denuded area. A narrow slip of gauze is placed under the flap, the end of which is carried through the cervical canal into the vagina for drainage. The flap is finally held in place by a continuous catgut suture, which is also used to close in the anterior flap over the cervix. When finished the field of operation resembles very closely the appearance of an ordinary abdominal hysterectomy, save that the line of catgut sutures in the cyst side is a trifle longer than on the other.

HEMOSTASIS SECURED BY ANGIOTRIPSY.

DR. TUFFER.

Hemostatis by Angiotripsy according to Dr. Tuffer is secured by crushing the lateral ligament in vaginal hysterectomy by means of strong hemostatic forceps. The same principle has been applied to general surgery. The healing process is all that could be expected. The advantage claimed is to do away with the irritation of ligatures.

APPENDICITIS.

POINTS IN THE TECHNIQUE OF THE OPERATION FOR APPENDICITIS.

JOHN B. DEAVER.

He uses in some cases the incision parallel with the semilunar line, in other cases the incision which runs obliquely between the anterior superior iliac spine and the semilunar line. The incision on the side of the semilunar line is used when only a small incision is necessary.

In chronic cases, with few adhesions, the appendix may be removed through an incision which will admit only the index finger. If he uses a buried suture to close the wound, he employs silver. He rarely advises the use of a supporter after healing of the wound.

He affirms that those who advocate leaving the appendix, belong to the class of surgeons whose experience is limited in this kind of work. The appendix should be removed in the vast majority of cases. The appendix should be excised completely, being cut off the cecum with a pair of curved scissors, and the wound closed. If the entire head of the cecum is involved, it is far safer to wall off the cecum from the general peritoneal cavity, with gauze. Allow nature to dispose of the necrotic tissue, and later if necessary, close the resulting fecal fistula.

THE BEST METHOD.

DR. M. E. RICHARDSON.

The actual cautery is used to separate the appendix. The stump is burned close to the ligature, and the whole depressed into the wall and buried there beneath four or five silk sutures.

EXTIRPATION OF THE RECTUM.

DR. J. M. MATHEWS.

He improves Kraske's method because of its difficulties and dangers, and because by a simpler and safer method the entire rectum can be extirpated. The circular method is simple and easy, and if there is any want of room, the removal of the coccyx will give ample space.

The sacrum should be left in place. He dilates strictures by the use of the dilator, and does not subsequently use any bougies. After the dilation he plugs to prevent hemorrhage.

DISEASE OF THE SIGMOID FLEXURE.

DR. MATHEWS.

He opposes Kelly's method and thinks it is dangerous. His reasons are this statement.

He suggests the following plan:

The instruments to be used are a soft rubber flexible Wales' bougie and the ordinary bulb syringe. The bougie can be passed with perfect safety by an attendant or nurse and by means of these instruments we can treat without danger every inflammation or so-called ulceration of the sigmoid flexure.

OUR LEGAL RESPONSIBILITY IN THE TREATMENT OF FRACTURES.

A. G. Cook, M.D.,

HARTFORD.

The subject of fractures is always of interest to the practitioner of medicine. He is liable to be called at a moment's warning to set any kind of a broken bone. If the result is fortunate the patient takes it quite as a matter of course; if the result is not all the patient expects, and these expectations are often very unreasonable, the doctor loses his family and is sometimes sued into the bargain.

Every layman considers himself a competent judge of bone-setting. It is something tangible, mechanical in fact, like the work of a carpenter. He judges entirely by results. If the bone is properly set the limb will be perfect; if the limb is short, or stiff, or crooked, or unserviceable, the bone was not properly set and that is all there is about it. The nature of the original injury, the previous health of the patient, the environment and a dozen other important factors are never taken into consideration. Whether the patient be young or old, tubercular or syphilitic, rheumatic or healthy; whether the fracture be compound or simple, transverse or comminuted, in the shaft of a bone or involving a joint, it is all one to the layman,—a break is a break. John Jones, he says, had a broken leg, it was properly set and now he is as well as ever. If Jones' leg could be set, so can mine, and I see no reason why I cannot have as good a leg as Jones.

Now, as we all know, the treatment of fractures is not an exact science; the same causes do not invariably pro-

duce the same results. No man can expect to be always successful; the greatest surgeons and the most experienced and careful operators have all had failures and results that they deeply deplore. If John Jones, who has had his leg set by a competent man should again break the same leg, in the same place, and have it set by the same man, with the same splints, the result might be entirely different.

When one doctor sets and attends a fracture the responsibility is obvious and the patient, if he wishes to go to law, must sue the one doctor he employed. When two or more doctors are employed on a case, the question of fixing the responsibility becomes more complicated.

A case was tried a few years ago in Hartford that attracted considerable attention. A man fell from a scaffolding and broke both bones of both legs, a few inches above the ankle joints. He was attended by two doctors. The bones united in fairly good position, but considerable fibrous ankylosis of the ankle joints remained. The man being dissatisfied with the result and not knowing which doctor to blame, sued them both, his lawyer virtually saying to the jury: "There are the legs, there are the doctors who set them, which of those doctors is to blame or are they both to blame?" One doctor said: "I saw the case but once in consultation the day after the injury. I set the legs as well as they could be set at that time. I gave what advice seemed necessary, I was paid and went home and I was never asked to see the case again."

The other doctor said: "I have not had much experience in the treatment of fractures. Knowing this I sent for a more experienced man to set the bones and advise me in regard to them. I did not neglect the case and I did what the other doctor told me to do as well as I could under the circumstances."

The jury acquitted both doctors, on the ground, I

believe, that the disabilities were greatly magnified by the claimant and were not more serious than could reasonably be expected from the nature of the injury. Like the laity in general they apparently judged by results, and the question of the relative responsibilities of the two doctors remained unsettled.

Suppose the results had been less fortunate or the jury had taken a different view of the case; each doctor evidently considered the other entirely responsible.

The family doctor did not realize the importance of the after-treatment of fractures. He believed that if the bones had been properly set and were left undisturbed they would come out all right and that his duty was simply to call occasionally and see that the patient stayed in bed and did not meddle with the dressings.

The consulting surgeon, when asked why he did not again see so critical a case, replied with truth, that he could not dictate how many times he should be called; the family doctor was in charge of the case and it was for him to decide how much help he needed.

Such recriminations and misunderstandings can be multiplied indefinitely and much can be said on both sides.

Appreciating the force of both lines of argument and being in doubt as to where our relative responsibilities begin and end, and that the policy we had best pursue in similar cases, I have appealed to a lawyer, Mr. Frank B. Williams of Hartford, for a legal opinion. I will read Mr. Williams' paper on the subject:

The principles of law which determine whether or not a physician or surgeon, whose patient suffers an injury, is under any liability to the patient, are not special, or peculiar, or limited to him; they are merely the ordinary rules governing the relation of the workman, the business man, the lawyer or the clergyman to his fellow men.

Nevertheless a suit against a physician for malpractice

and a suit on a building contract for improper and faulty work, are not much alike. Similar principles must be applied to facts which are very dissimilar and the result is dissimilar law. It is for us to start with the common principles and apply them to the peculiar circumstances and conditions of the life of a physician and surgeon.

A physician or surgeon is not liable merely because he fails to get a good result or gets a poor one. The outcome may be entirely Nature's work; or entirely the act, careless or wilful, of the man himself. Nor is he necessarily liable if he did actually bring the result about, by what he did or by what he might have done and failed to do. To create responsibility there must be an injury, the result of the practitioner's wilfulness or negligence or ignorance; and even where the injury was caused in a greater or less degree by the medical man,—the patient, if he also was negligent, and so brought the result upon himself, cannot recover.

The fact therefore that no cure has been made, or that a bad result has occurred, does not in law furnish even a presumption against the physician. The patient must prove his case, and prove it by evidence showing negligence or lack of skill on the part of the practitioner, resulting in the injury.

We all know that if we intentionally injure another, we have done him a wrong. It is unnecessary here to consider this phase of the question. It remains for us to see what degree of care a physician or surgeon is bound to use, and what amount of skill he must possess and exercise.

The law requires of every man in his acts reasonable and ordinary care under the circumstances. It requires the same of the physician and surgeon; no more, no less. But a railroad engineer on an express train must be more careful than the driver of a mule team, on account of the different circumstances of the two. Reasonable care of

an express train is much more minute and painstaking than reasonable care of a pair of mules. One is more dangerous than the other; and the result of carelessness would be disaster more far reaching and fatal.

So of the medical man more care is required than of the blacksmith, and much more than of the digger on the streets. He deals with human life and limb; and that fact makes it necessary and reasonable that he use great care.

Let us now go somewhat more closely into the circumstances under which the medical man works. He is of course liable for what he and his drugs and instruments negligently do; but his responsibility does not stop here. He is in charge of his case, and is expected to do, so far as he can, what should be done. He is therefore liable for negligently failing to do the needful thing.

And it follows logically that when he once accepts a case, he must, unless engaged for a special service or period, or dismissed, continue to call and give needful attention to the patient, until such attention is unnecessary. Whenever proper, as in case of a broken limb, he must give needful directions to the patient as to what he is to do or is not to do after the visits cease.

Physicians and surgeons who form partnerships, open private hospitals, and thus have employees under them, etc., are liable for the negligence of those with or under them, like partners and employers in any other business. A physician who gives another physician associated with him, or a nurse in a public hospital, directions, is responsible for the result; since the result is his act, just as much as if personally done by him. But except for some such reason as above given, he is not responsible for the act of another. He cannot be held for negligence of the nurses in a public hospital to whom he has sent his patient. Nor is he liable for the negligence of a reputable, competent brother physician to whom he has rec-

ommended his patients during his absence, or in whose charge he has left them.

An interesting case on this very point,—the only one within my knowledge,—was decided in 1895 in New Jersey. One Dr. M., a practicing physician, had promised H. to attend his wife during her confinement. A short time before it took place, wishing to go away on a three days' vacation, he called on the wife and decided that he would not be needed during that time. While he was absent,however, the wife's travail came on, and H. telephoned to Dr. M.'s office. Dr. P. responded, saying that Dr. M. was out of town and he was taking his place. He then proceeded to deliver the wife of her child.

H. brought suit against Dr. M. for alleged negligence on the part of Dr. P., but failed in his case. The reason given was that Dr. P. was not the partner or agent or employee of Dr. M., and that even if it could be said that Dr. M. made a contract with Dr. P. to attend to this case, still Dr. P. was in independent practice; and the well known principle applies that a party contracting with a person who follows a distinct and independent occupation of his own is not responsible for his negligent and improper acts.

A physician or surgeon, by the very fact of calling himself such, holds himself out to the world as possessing a certain knowledge and skill; and the world has a right to rely upon his possessing it; just as we expect a boat builder to construct boats that will float and sail, and a carpenter to build houses that will stand. What skill must the medical man possess and exercise, or be liable for the consequences?

He must have the average, ordinary skill and knowledge of the reputable members of his profession in his line of practice; or to put it in another way: he must use the skill that reputable physicians and surgeons ordinarily exercise in the treatment of their patients. And

while he is not necessarily at fault for failure to employ the latest appliances, the courts, in deciding as to what reasonable skill is, will always have regard to the state of advance of the knowledge and skill of the profession at that time.

A physician is only required to be up to the average of reputable men in his line. A physician in general practice is not bound to possess the skill of an oculist; and is only liable if he negligently undertakes an operation in which an oculist is essential, in a case where one can be obtained. So a physician with no special pretentions as a surgeon, is responsible if ordinary good judgment would lead him to call in a surgeon, and he fails to advise it where one is within reach; but is not expected or required to be the equal of the average of surgical specialists, either in judging the emergency, or in performing the operation when one is performed by him. So the general practitioner in the smaller places, is obliged to have only the skill which other practitioners in similar localities with the same opportunities and experience, ordinarily possess. He is not obliged at his peril to attain the average of the eminent specialist of the large cities.

A medical man who belongs to a recognized school of medicine and treats his patient according to the methods of that school, ordinarily incurs no liability. The practitioner who clings to old, established and well tried methods is in the path of safety; while the man who uses the new and experimental, runs a much greater risk.

There is one subject which I have reserved for the end, because it is involved in much that has gone before and yet is not entirely covered by it. Where the regular family physician calls in a specialist, what is the liability of each for a bad result? It is difficult to give a positive answer, not because there is any new or difficult principle of law involved, but for the reason that it is hard to tell

what the actual facts are. Given the facts, and the law follows as a matter of course.

Let us suppose a country patient, a broken leg, a family physician living in the neighborhood, a surgeon called in from a distance, a bad result caused by malpractice, and a suit against both doctors. What will be the result?

That depends entirely upon the facts. If the surgeon gave certain directions, and the bad result followed from them, the surgeon is liable; if he failed to give necessary directions and the failure caused this result, again he is liable; if he was told that he was employed to see his patient through, and stops his visits too soon, and a later complication brings about the result, again the surgeon is liable : but if he was called for the purpose of setting the leg and that only ; or was dismissed, or gave notice that he could not attend longer ; and if he at that time gave proper treatment and directions so far as then could reasonably be expected, he is not liable.

The family physician may be legally responsible. He is if it was lack of reasonable care to fail to see and advise the retention of the surgical specialist; or to fail to detect the new complication, to treat it properly, or to see that the proper directions of the surgeon unexpectedly became no longer applicable. But in all this he must be judged as a general practitioner and not according to the standards of surgical specialists.

It is quite possible that a result should occur for which the surgeon would have been responsible, if in attendance; and yet neither he nor the family physician be legally at fault.

How then can the competent, careful surgeon called in by the family physician, so arrange matters as to avoid so far as possible, the risk of a judgment against him for a bad result for which he is not to blame,—a result, in all probability, caused by the negligence of the man and

his family, or the incompetence of the family physician?

He cannot do it by any bargain or agreement. He is liable only for negligence or culpable lack of skill; the patient would claim that there was negligence and gross unskillfulness; and any bargain not to be liable in such a case is against public policy, and void.

He is not free from responsibility merely because it is the family physician's case, and the family physician is said to be in charge of the case; for the family physician calls in a specialist because he is not competent to deal with the case alone and needs the directions of the specialist. The surgeon is in control for a while, and liable for what at that time he does or fails to do. It must be assumed and will always be claimed in case of accident, that the specialist, being the more skillful and well-informed of the two in a case of that sort, was chief, and the general practitioner merely his humble and dutiful assistant.

We will suppose that the surgeon does everything needful at the time of his single visit; and that it is distinctly understood both by the family physician and by the patient that he is hired for that once only. Is not the surgeon protected? Yes, if he can prove this. But it will be difficult to show that the surgeon was in attendance only for the one operation; and even then it will be claimed that the bad result was caused by what the surgeon did or failed to do at that time.

The only thing therefore for the surgeon to do if he wishes to protect himself fully, is to take charge of the case and see it through to a successful end;—charging for it of course. He must tell the physician at the outset: "If I set this leg to-day I shall be held responsible for the final result. I cannot be sure of the result merely by seeing to the setting to-day,—I must visit the case from time to time until recovery. Unless this is understood and agreed to I cannot and will not touch the case

or have anything to do with it." If after such a bargain the surgeon is prematurely dismissed by the patient or his physician, the surgeon has only to show these facts to win his suit.

It is for the surgeon to judge, in each particular case, whether such a precaution as above outlined is practicable, and worth while. A reputable and careful surgeon or physician is really in very little danger from malpractice suits, and few of you, in counting up successful suits of this sort within your own knowledge, will use up half the fingers of one hand.

Mr. Williams has clearly and explicitly expounded the law, but you must admit, he leaves the consulting surgeon in rather an awkward position.

He tells us that the burden of the responsibility practically rests with the surgeon as chief, whether he again sees the patient or not, and that the only way he can fully protect himself is to take charge of the case and see it through to a successful end, dismissing the family doctor or converting him into an assistant.

This course is impossible; professional etiquette does not admit of it, nor would the family doctor, for a moment, tolerate it.

The consulting surgeon then, with neither authority over the patient nor even the opportunity of seeing him again save by the courtesy of the family physician, is compelled to bear by far the greater share of the legal responsibility.

In the discussion which followed Dr. Parsons said, Dr. Cook has given us a valuable paper. He has conferred a great favor upon us by giving us a legal opinion which will be of service to us when we have it in print in our homes. Generally a legal opinion as complete and

as thorough as this would cost us something. This has cost us nothing and we shall treasure it when we get it in the Proceedings. Dr. Cook has given us his views from a surgeon's standpoint alone. He has taken too narrow a view of the subject. Our legal responsibility! We have a responsibility broader than that. We take more upon ourselves than just what the law requires; there is also a moral responsibility. That physician who is not enthusiastic to bring to bear the best results possible, is no physician at all. Our business is to heal the sick and relieve the cripple. We have an abundance of literature to help us. We need the best skill which can be brought to bear; we need more than an ordinary skill. We must be conscious of being capable of making a diagnosis correctly and treating the patient well. We have no business to undertake the case unless we have skill. If I am called to a case my responsibility does not cease until the case is finished. I am responsible, moreover, for whom I call in council. My responsibility doesn't cease when that man comes. It is my business to protest or to object if he does things which I think are not the best.

A physician's loyalty is multiple. He has a loyalty to his profession which leads him not to merit the position of a quack and to do the best he can, even if he doesn't get his pay. He has a loyalty to his method, and having that he will see that it gets the merit it deserves. Dr. Agnew declared he would not undertake an operation unless he could have the care of it. Because his method was good he must see that it was carried out. The physician has a loyalty to his patient. He is not to treat him simply so that he may escape a charge of malpractice but his effort must be to put his patient in a condition as good as before the accident. Nor, again, is he relieved from responsibility until his patient is placed, well before him.

Dr. Beresford was once called in consultation to Man-

chester. He found a homeopath in charge. He asked the family who was to retain charge of the case. They replied, the other man. He declined to see the patient, for as consultant he had a responsibility. Both physician and surgeon should be partners, each ready to assist the other. The best good of the patient is the object to be sought, not the avoidance of a malpractice suit.

Dr. Harris of Norwich, agrees with Dr. Cook. Partnerships are good but they cannot divide the responsibility in treatment of fractures. A man is responsible or he is not responsible. A man who treats a broken bone has a responsibility. Treatment of a fracture is not setting it; it is keeping it in place. In my treatment I require that I shall handle the fractures and do the dressings, myself. The family physician may see it with me, he may look at it, but he must keep his hands off the case. Dr. Cook is right. If a bad fracture comes under a physician's care and he cannot properly attend to it, let him put it into another man's hands. He may see it and may advise concerning it, but the surgeon must attend to it.

Dr. Gurdon W. Russell: If Mr. Williams had been a physician of many years' standing he would have learned that a consultant is not always called in because he is a superior man. To have counsel gives confidence to the attendant and satisfies the family. He is not always obliged to follow the advice of the consultant.

Another point—if a consultant is called in and doesn't think the attendant competent while he finds himself perfectly so it would not be according to ethics, it certainly would be a new thing for a man to blow his own horn in such a way. How many consultations would a consultant have?

Dr. Kane—There is a mutual relation between the family, the family physician and the consultant. If the latter sees the patient but once he does a threefold wrong; one to the family, one to himself, one to the family physi-

cian. It is wrong to the patient in that it prevents him from having the best possible attendance; it is wrong to himself because it allows him to be used as a tool; it is wrong to the practitioner because it allows him to believe himself competent when he is not. The family physician is placed upon the highest plane. The thorough family doctor knows no fear in treating his family. There is nothing in this to prevent his obtaining the best result for his patient. The moral, is higher than either the legal or the ethical, code. No man should take a case without treating it in the best possible manner.

Dr. Bailey doesn't believe that all the medical talk made will stop suits for malpractice, until men are educated in better and kindlier feelings toward one another. A majority of the suits for malpractice are brought through the instigation of some medical brother. He is forced to think so because of his own experience in two or three cases.

The remedy is to begin with ourselves. One case was like this:

A brother was engaged to attend a woman in her coming confinement. He (Dr. B.), knew nothing of it. His brother was in Florida. The husband came to his office. He was away engaged with a case of hard labor with contracted pelvis. The husband didn't say that the doctor engaged, Dr. B.'s brother, was away but was told that if the case was urgent he better get another doctor. He came home, found another call waiting and went to it. The husband did get another doctor. When told that the one he had engaged was away the man would not believe it. He however sued him as soon as he returned, for five thousand dollars on the ground that the child died and had the physician been there it could have been saved. Dr. Bailey believes the man in attendance told the family that if he had been called he might have had a live child.

He knew of two other cases, one of which was a fracture. The attendant laid the result upon the surgeon who set the bone and saw it but once.

Dr. Cook closed the discussion by saying he was much obliged to those who had remarked upon his paper. His object in writing was not to lay down rules but he did want to know how to set bones and keep out of jail.

LYMPHOID HYPERTROPHIES OF THE PHARYNGEAL VAULT.

Carl E. Munger, M.D.,

WATERBURY.

To Meyer of Copenhagen the children of the world owe an obligation to an extent which is not easily estimated. To him is due the credit for bringing to the notice of the medical profession an appreciation of the pathological significance of the presence of certain lymphoid structures which are situated in the naso-pharyngeal vault and which when they have undergone a hypertrophy carry in their train untoward symptoms, which if unrelieved are the source of distressing and lasting ill effects, producing deafness and chronic ill health, and interfering with proper development of body and intellect.

Within the last few months a monument to his memory has been unveiled in the city of Copenhagen, not by his own townspeople or indeed by the country in which he lived, but it was erected by international subscriptions from the whole civilized world. It is rare indeed that any Doctor of Medicine has been so honored. And why was he so conspicuous and why was he deemed so worthy of distinction? Because in 1872 he wrote a treatise on adenoid vegetation, based on the study of one hundred and two cases, which was so complete and classical that it forced itself upon the attention of the medical profession and was the means of relieving thousands of unfortunate children from deafness and giving them an opportunity to properly develop. Although volumes have been written on this subject since that time, very little of real value has been added to, and nothing whatever

has taken away from, the deductions which Meyer brought to light.

I take the liberty of writing on this subject because I am continually impressed with the fact that the general practitioner either is not familiar with the subject except in a very vague way and does not connect certain trains of symptoms with the pathological condition which obtains in the naso-pharynx, or that he underestimates the presence of this hypertrophy as a predisposing factor in many infantile and children's diseases. And this is unfortunate as he it is who is constantly coming in contact with these cases and he it is who determines whether or no this condition exists, and who dictates whether or no any procedure, operative, or otherwise, shall be entered upon. Whenever a child is brought to you with the following history of mouth breathing, snoring, restlessness during sleep, frequent attacks of undefined illness of a few hours or two or three days' duration, with a febrile action, frequently an increasing deafness, and still more frequently attacks of ear-ache, a vacant expression of the countenance, with an inability to pronounce certain words clearly, due to the interference of nasal resonance, you may be reasonably sure that you will find a naso-pharynx that is more or less blocked with an irregular mass of tissue which is a diseased, inflamed and enlarged growth of the lymphoid structures which are normally present in this situation. Upon examination you will find that there is present more or less complete nasal stenosis which is not due to any stoppage in the nose itself. When you look in the mouth you will find the hard palate very highly arched and a correspondingly near approach of the two sides of the upper jaw to each other. Hypertrophied tonsils may or may not be present. On depressing the tongue the enlargement of the so-called Adenoid Vegetations may extend so far down the posterior pharyngeal wall as to be visible, or these may be seen by pulling the soft palate upwards and forwards with the

palate hook. A rhinoscopic examination will in tractable children or rather children with tractable throats demonstrate the presence of the hypertrophied lymphoid tissue; and these means failing, digital palpation is a sure means of determining the presence or absence of these growths.

Synonyms. Hypertrophy of the Pharyngeal tonsil, or Luschka's tonsil, Adenoid Growths, Adenoid Vegetations, Adenomata of the Pharynx, Post Nasal Vegetations. The symptoms present in this condition of Naso-pharyngeal obstruction are numerous and marked. The most common subjective symptoms are—A vacant expression of countenance, mouth-breathing, snoring, restlessness, night terrors, incontinence of urine, malnutrition, deafness, nasal stenosis, loss of nasal resonance, constant tendency to catch cold and aprosexia or inability to apply oneself to mental exercise;—of the objective symptoms the most marked are—the ever open mouth, the pinched nose, the arched palate and the mass of hypertrophied lymphoid tissue in the nasal pharyngeal space.

Pathology. These vegetations are the hypertrophies of the lymphoid glands that are normally present in this location and consist of lympoid follicles embedded in the retiform adenoid tissue of His and are bounded apically and laterally by columnar ciliated epithelium. (2) The prognosis of these growths and the prognosis of the patients having them is not one and the same thing. At from eighteen to twenty-five years of age these growths usually become more or less atrophied and cease to be troublesome mechanically, but there is very apt to be left a chronic inflammation of the Pharyngeal Glands which will require proper treatment. But the condition of the child with these vegetations usually continues to grow worse; if there is deafness present it gets more deaf; if there is a purulent discharge from the ear it continues to discharge, with the every ready tendency

for the mastoid or the brain to become involved. The child remains puny, is stupid, ever falling behind its companions in school and instead of developing into a strong, bright, active youth continues to carry the vacant expression and is handicapped for life because he cannot breathe properly at the most important period of his development.

Etiology. Many causes have been suggested as being responsible for this condition. It is essentialiy a disease of childhood and is undoubtedly sometimes congenital. .(I have myself found Adenoid Vegetations sufficient to produce complete nasal stenosis in a child six weeks of age).

Scrofula, the exanthemata, rheumatism and diphtheria have all been considered causative of the growths. Heredity undoubtedly plays a prominent part in predisposition, this condition not infrequently being present in several children iu the saine family. The coudition, lymphoid diathesis, (3) is present very frequently in childhood and is probably the most important factor in causation. Frequent inflammations of the naso-pharyngeal vault will no doubt sometimes cause these enlargements as in childhood lymphoid tissue is ever ready to become hypertrophied. A large proportion of deaf mutes suffer from adenoid growths, Wioblesky finding adenoid hypertrophies in 57.5% of a large number of deaf and dumb children which were examined by him.

Treatment. For the relief of this condition there is but one indication,—removal of the offending mass. All other measures are faulty and will give only disappointment in their use. As to the method of removal, that seems to depend on the habit of the practitioner. Snaring with the cold wire snare, or galvanocautery snare either through the nose or through the mouth, scraping with a curette or by means of the finger-guard surmounted with a scooped-shaped spoon or by means of

the finger alone, or removal by means of the various shaped cutting or pinching forceps. These growths may be removed while the child is conscious or while under the influence of general anesthesia. The objections to operating without anesthesia, are the difficulty of thoroughly removing the growth in a struggling child and the terror which impresses him at the time of operation and which makes him very unwilling to visit you again. Of the general anesthetics which may be used, the most popular are nitrous oxide gas, chloroform and ether. The nitrous oxide gas produces an anesthesia which is very short and which makes it very difficult to thoroughly remove these growths unless there is a high degree of rapidity and expertness used. Chloroform is the most satisfactory and the pleasantest apart from the element of danger which is ever present in its use. There is at the present time a disposition to deprecate the use of chloroform for the removal of these growths for the reason that there have been several deaths under its use in these cases and that there seems to be a feeble resisting power in children with the lymphoid diathesis or the Habitus Lymphaticus.

Ether may be used in one of two ways. Frequently the primary stage of anesthesia will give sufficient time for the removal of the growths and eliminates the occurrence of vomiting and the swallowing of blood. Complete ether anesthesia is perhaps the most satisfactory method and one which is most generally used in this country. The after-treatment consists in quiet for the patient and exercising precaution against his catching cold after the operation. Local cocaine anesthesia is used with much success in adults.

Recapitulation. Naso-pharyngeal Lymphoid hypertrophy is of very frequent occurrence in childhood, its symptoms are marked and unmistakable, its removal is easily accomplished, recovery from operating very sure,

and the good results produced by operating are pronounced and brilliant. The puny child gains flesh and becomes hardy, the nervous child ceases to be nervous, the deaf child gains its hearing, the backward child acquires ease in studying, and the vacant expression of countenance changes to that of intelligence. In short the child who has been handicapped by disease is now able to take his place in the world with an ease and success which would have been impossible without the removal of these lymphoid hypertrophies, and as a last word I would suggest, that following out the present tendency to have systematic examination of school children's eyes, it may be just as essential and just as beneficial to have the children's throats examined, the presence of these growths demonstrated and their removal accomplished.

BIBLIOGRAPHY.

1. Archiv. für Ohrenheil Kunde, 1873 and 1874.
2. Diseases of the Throat and Nose, Browne, P. 623.
3. Bosworth. Diseases of the Nose and Throat.

THE TREATMENT OF SUPPURATING WOUNDS.

EVERETT J. MCKNIGHT, B.A., M.D.,
HARTFORD.

The dressings now in use in the treatment of wounds belong to two classes, the dry and the moist. Dry dressings include those where sterilized or antiseptic gauze or other absorbing material is used covered with cotton and a bandage, with or without a powder of some kind dusted over the surface of the wound.

In the treatment of suppurating wounds this form of dressing is not entirely satisfactory. The secretions from the wound which at first impregnate a small portion of the gauze soon become hard and dry and form an impervious layer which prevents further absorption by the remainder of the dressing and causes a retention of secretions in the wound. This gives rise to pain, irritation of the wound, a more rapid proliferation of microorganisms and a separation of the wound surfaces. There is also an increased pressure in the wound which favors infiltration of surrounding tissues with septic organisms and a more rapid ptomaine absorption.

Gerster, in a paper on Aseptic and Antiseptic Details in Operative Surgery, read before the Second Congress of American Physicians and Surgeons in 1892, says, "While capillary attraction, exerted by a dry absorbent dressing, is frequently adequate to drain an aseptic wound of its serous discharges and while rapid drying and crusting of these dressings is just the thing we want to seal a sweet wound against the possibility of subsequent infection from without, these very qualities of the dry absorbent and occlusive dressing make it unfit for use in certain cases where the secretions are purulent."

This might be different were it possible to render this class of wounds sterile or so nearly sterile as the ordinary operation wound.

The experiments of Welch, Schimmelbusch and others, prove that in suppurating wounds it is impossible to obtain thorough sterilization. The septic germs are enveloped in blood-clots and imbedded in the tissue particles if they have not already involved the interstitial connective tissue.

Haenel, in 1895, after a series of experiments, "Believes that his researches support the opinion that a disinfection of living tissues with chemical agents is impossible. The requisites for healing are free drainage for secretions, the holding of the wound wide open and an outward flow of the osmotic secretions into the dressings."

In 1894 Schimmelbusch reported some experiments he had made on animals in disinfecting wounds infected by disease germs. "The results were surprisingly unfavorable as regarded such attempted disinfection. In spite of making use of the most powerful disinfecting material, no results could be obtained."

Another objection to dressings of this class is the chemical action which takes place between the albuminous wound secretion and the antiseptics, especially those containing mercury, where an insoluble albuminate is formed which is entirely without germicidal action. There is also more or less pain attending their removal and a tearing of the granulations on the surface which tends to retard repair. There is also some hemorrhage which opens up new avenues for infection of surrounding tissues.

To overcome these objections moist dressings consisting of gauze impregnated with an antiseptic in aqueous solution covered with rubber tissue or some other impervious material are often used. In this, drainage is com-

plete, there is no retention of secretion, consequently surrounding tissues are depleted, circulation is increased and the process of repair is more rapid.

Objections to moist dressings are that granulations are apt to be exuberant and retard healing. They often cause eczematous conditions of the skin and an acute edema with exfoliation of epidermis. Bacterial proliferation is very rapid in most dressings especially those containing corrosive sublimate where the insoluble and inert albuminate is rapidly formed, thereby requiring frequent changes, which is a great objection. Also all antiseptic substances exert a more or less irritating effect on the wound itself.

Some time ago Dr. Halsted suggested the use of a strip of rubber tissue over the wound outside of which the ordinary dry dressing was applied. The objections to this method are that, "However small the piece of tissue was cut to cover the wound, the wound has always presented reddened and swollen edges, been painful to the touch and had a macerated appearance, the granulations have been exubérant and edematous and the time required for healing has been prolonged. In short, the method partakes of many of the drawbacks of the moist dressings without the advantage possessed by them of perfectly free drainage."

In 1884, Dr. VanArsdale of New York, commenced a series of experiments with a view of obtaining a better dressing for the class of wounds under consideration. First he tried carbolated oil which was unsatisfactory mainly on account of its irritating properties. He then tried olive oil and balsam of Peru, the disadvantages of which were that, "It was thin, readily dispersing over surfaces and dressings and could not be confined to the wound itself; it became changed by standing and would only take up $1\frac{1}{2}\%$ of balsam." He then tried castor-oil which will take up if necessary 50% of balsam.

On January 12, 1893, he read a paper on "The Treatment of Granulating Wounds," before the Section of General Surgery of the New York Academy of Medicine, in which he called attention to the advantages of the oil-balsam dressing. "This is viscid and will remain for a long time on those parts where it is spread." "It does not, if properly applied, prevent the dressings from taking up blood and secretions and does not interfere with drainage." "The oily solution saturates the fibres of the gauze while the aqueous fluids are drawn up into the interstices. While, therefore, the wound itself remains moistened by the oil and balsam, it is nevertheless drained of its aqueous moisture." However much discharge there may be the wounds are always dry when the dressing is removed provided sufficient absorbent material has been used. This mixture will not turn rancid but will keep indefinitely. Balsam of Peru is a reliable antiseptic but it is too irritating for general use when used pure and is expensive. He did not think it necessary to sterilize the oil as inoculations had been made for him several times without producing cultures. The mixture can be used in 4, 5, or even 10% solutions and only the best qualities of both should be used. It should have a rich dark brown color and be perfectly clear. "A bunch of gauze is spread with the mixture over an area slightly larger than the wound to be dressed, the amount depending on the character of the wound and the length of time it is to be left. The first four to six layers of the gauze should be permeated, several layers of dry gauze should be placed over this, then the protective, cotton and bandage. Powders may be used, the oil preventing the formation of a crust." Dr. VanArsdale prefers for this purpose subiodide of bismuth. It is not well to use iodoform gauze as the glycerine does not harmonize with the oil, but iodoform powder may be added to the solution to the amount of two or three per cent., in which it is dissolved and rendered inodorous.

The advantages of this method are that the secretions are immediately taken up and free drainage established in the tissues surrounding the wound.

By removing secretions from the vicinity of the wound eczematous conditions are prevented.

The formation of epithelium over the granulating surfaces progresses more quickly.

Granulations do not adhere to the dressing, hence changing dressings is painless and quickly effected without hemorrhage and consequently with little danger of infecting the wound.

Dressings need not be changed oftener than twice a week.

The wound itself is kept perfectly dry so that bacterial proliferation is not so rapid as in moist dressings and there is no absorption of ptomaines because the secretions are not under pressure.

There is no elevation of temperature on account of free drainage, and no irritation of the wounds.

This dressing does not prevent suppuration; it simply drains the wound and keeps it clean.

In closing he says, "I desire at the present time to recommend the dressing particularly for all sorts of granulating wounds as a bland dressing which shall favor epithelial growth and increase drainage without irritation."

Gallant, in the Annals of Surgery of 1897, page 329, gives a résumé of twenty-nine thousand cases treated with this dressing at the Eastern and Good Samaritan Dispensaries during the years 1887 to 1896. In 2,482 cases of burns and scalds the blebs were opened; in neglected cases the elevated skin was cut away and the raw surfaces dusted with subiodide of bismuth. Pain subsided in a short time after the balsam-oil dressing was applied. Suppuration and fever were notably absent. Suppuration was never met with where this was the

primary dressing. Replacement of epithelium was remarkably rapid and the cicatrix soft and pliable.

Six thousand four and twenty-eight wounds of different kinds were similarly treated, also 9,925 abscesses, 4,634 being on the hands and fingers, including felons, paronychia and palmar abscesses, and it was in these cases that most brilliant results were obtained.

There were 1,352 cases of lymphatic gland abscesses principally located on the necks of children.

"Under nitrous oxide anesthesia a small incision was made at the point of most marked thinning, a pair of modified Lister's forceps introduced, the blades separated so as to stretch the opening enough to admit a fenestrated rubber drainage-tube. This was beveled at the end to facilitate introduction with the forceps and carried to the bottom of the abscess cavity. It was then cut off on a line with the skin. No irrigation or scraping of the cavity was practiced nor was any preliminary disinfection of the skin necessary. A large quantity of gauze or oakum enclosed in the gauze to which the balsam oil had been applied, was pressed directly over the opening, the whole covered with rubber tissue and secured by a muslin bandage over which a few turns of starch bandage were taken to prevent the child from removing the dressing. On the third day when the dressing was first removed the following conditions were noted: First, the dressing was moist throughout, more or less soaked by the discharge; second, the abscess cavity had contracted down to the natural level, the tube being partially extruded, and its calibre not plugged, as is usual with other dressings; third, the short tract of the drainage-tube and the small opening made by the knife were all that remained of the large abscess. Two or three more dressings sufficed to complete the cure and a scar not more than one quarter inch remained. Packing cavities was

never practiced as it retards contraction. The dressing is simply laid over the opening."

I will not weary you with further quotations from this paper but wish to emphasize what he says in regard to irrigation and packing of abscess cavities. Some time ago I abandoned irrigation of abscess cavities, especially after an incision and have been gratified with the results. In felons, alveolar abscess, etc., where it is difficult to retain drainage of any kind in position, I avoid any pressure on the part whatever at the time of incision. If these cavities are thoroughly emptied, the edges of the incision unite quickly, often necessitating another incision. If they are simply incised and no pressure applied, the pressure of the contents in the inside of the cavity will cause a gradual emptying of the abscess which will in most cases prevent union of the incision.

That irrigation of abscess cavities is sometimes injurious I firmly believe. Welch, in his paper on Conditions Underlying the Infection of Wounds, (Transactions of Congress of American Physicians and Surgeons, 1892,) says: "There are good reasons to believe that the process of suppuration serves a useful purpose and is one of the most important and efficient weapons employed by Nature in combating with invading micro-organisms."

"Exactly how abscess formation checks the invasion of bacteria we do not know. That the bacteria may die, often in a short time in pus both within and outside the body, has been demonstrated. The leading theories are these: leucocytes and other cells act as phagocytes taking into their bodies the bacteria and killing them;—the wall of leucocytes and other cells at the margin of an abscess acts as an obstacle to the passage of the bacteria into the surrounding tissues; pus contains chemical substances injurious to bacteria and antidotal to their toxic products; the bacteria starve in pus, not being able to assimilate such concentrated food."

"Of very immediate practical interest to the surgeon is a knowledge of the various conditions in and about a wound which favor the lodgment and development of pyogenic bacteria. In a general way it may be said that anything which interferes with the integrity of the living tissues in a wound is a predisposing cause of suppuration in case suitable micro-organisms gain entrance. Experiments have shown that the necroses produced by chemical irritants such as carbolic acid and corrosive sublimate, favor the multiplication of micro-organisms of suppuration. Dr. Halsted has shown that the irrigation of fresh wounds by a solution of corrosive sublimate as weak as one to ten thousand is followed by a distinct line of superficial necrosis demonstrable under the microscope."

Park, in his paper on Wound Infection, (Transactions of Congress of American Physicians and Surgeons, 1892,) after calling attention to the chemotactic properties of the leucocytes and germicidal action of blood serum says: "Sepsis and infection are combated in more than one way by natural agencies and by inherent properties of cells and fluids, totally aside from the measures which the surgeon institutes and the wisest man is he who studies to take advantage of these vital activities rather than introduce new and conflicting elements from without."

Thornbury (Buffalo Medical and Surgical Journal, Vol. 32, page 92), says: "The forcible irrigation of suppurating wounds does not simply wash away purulent secretion, but on the contrary may tend to force the infectious material into the wound and rather disseminate than limit the infection."

I think, then, it is evident that in simple abscesses, conditions exist which of themselves favor a limitation of the suppurating process and the obliteration of the abscess cavity, provided thorough drainage is established

and maintained. Where, however, necrotic tissue of a thick pyogenic membrane exists curettage and irrigation are necessary, but in simple abscesses I believe better results will be obtained without irrigation and without packing of the cavity, which interferes with rapid contraction and by its irritation as a foreign body greatly increases secretions.

My attention was first called to the balsam-oil dressing when in attendance upon the annual convention of the International Association of Railway Surgeons at Toronto in July of this year.

During the last three months I have used it extensively and believe it to be an ideal dressing for suppurating wounds. I can heartily indorse the conclusions arrived at by VanArsdale and Gallant, from whose articles I have largely drawn in the preparation of this paper and can recommend it as the best dressing I have ever used for the class of wounds under consideration.

THREE CASES OF FEMORAL HERNIA.

E. P. Swasey, M.D.,

NEW BRITAIN.

The occurrence of three cases of incarcerated femoral hernia in my practice during the past year has suggested that their recital with attention to some particular points might be of practical interest to the profession.

One of these cases occurred in a woman of over seventy-four years of age, another in one of sixty-five years, the third and last, also a female, was fifty-six years old. There was nothing peculiar or unusual in any of the cases, but they were marked examples of different degrees and characters of femoral hernia—the first being one of epiplocele and the other two cases of enterocele. All the cases were operated upon in private houses with limited facilities, but nevertheless under thorough asepsis. In two of the cases, the first and the last, the treatment varied somewhat from the usual method, and it is to these points that I wish especially to call your attention.

Case I.

Miss A. B., Irish, aged sixty-five, always well. Some five or six years ago noticed a small lump in right groin which gave her no trouble. On February twentieth, 1898, after putting down a carpet, her attention was drawn to a sudden and decided increase in the size of the tumor, accompanied with severe pain.

A physician was called at the time who stated that he reduced the tumor, but nevertheless it persisted with constant pain, although no further medical attendance was given until I was called on February twenty-eigth, eight days after the onset of the symptoms.

At the time there was found a tumor in the right groin, sausage like in form, fully three and one-half inches in length and one and one-half in diameter, lying parallel with and just below Poupart's ligament, the outer end extending way beyond the femoral vessels. During this time there had been no vomiting and no movement of the bowels.

Under these circumstances only slight attempts at reduction were made, and failing in this, an operation was advised which however was postponed until the following morning, the surroundings of the patient decidedly demanding some revision beforehand and her condition warranting the delay. Accordingly on the morning of March first, all necessary preparations having been made, assisted by Dr. McKnight, an incision was made over the tumor, and through the various agglutinated layer down to the sac. On opening this, a mass of omentum was unrolled fully four inches long, constituting the entire contents of the hernial sac.

It was not thought best to return this mass of thickened omentum to the abdominal cavity so it was quilted off as high up as possible, silk ligatures being used and the stump left in the canal, to which it was firmly adherent. The sac was tied over the stump and the wound dressed by the open method. The bowels moved naturally within thirty-six hours and convalescence was uninterrupted.

Case II.

On September sixteenth, 1898, at 7 P. M., was called to see Miss H., American, 74½ years old, who gave the history of a hernia which first appeared when she was twenty years old.

This had been easily retained by a truss, and had given her very little inconvenience, other than that it was sometimes reduced with difficulty. She was a constant sufferer from constipation.

Upon examination there was no evidence of enlargement of the tumor, but she had experienced a good deal of pain across the abdomen all day. There had been no vomiting. Efforts at taxis were ineffectual. Preparations were made for an operation on the following morning.

Upon opening the sac it was found to contain a small quantity of serum and a loop of intestine of a deep violet color, which cleared up somewhat on division of the constriction and the application of moist heat. The tumor was returned without difficulty. The sac was ligated high up with chromacised cat-gut, and the wound packed with iodoform gauze.

Case III.

On Saturday forenoon, February fourth, 1899, I was called by Dr. Anderson, of New Britain, to see Mrs. J., Swede, aged fifty-six years, housekeeper by occupation and a woman of feeble health. On the previous Thursday afternoon she was taken with severe pains in the right groin, followed by vomiting, and Dr. Anderson was called in the next afternoon. He found a small tumor in the right groin which he diagnosed as a femoral hernia. The patient had been vomiting frequently for twenty-four hours, and had been in constant pain. He failed in his attempt to reduce the hernia, and administered opium to relieve the pain, his request for an operation being flatly refused by the husband.

On the following morning, the symptoms having persisted, he asked me to see the patient with him. This was at 11 A. M. We found a tumor the size of an English walnut, tender to the touch and of a dusky red color in strong contrast to the surrounding skin. Pulse and temperature were normal, but the vomiting which was persistent had become stercoracious in character.

The family were still opposed to an operation, so the patient was anesthetized and after a brief but futile

attempt at reduction, consent was reluctantly granted to an operation, the preparations for which were immediately carried out. At 2:30 P. M. she was again etherized and an incision carried down to the sac which on being opened released a quantity of dark, stinking serum, revealing a knuckle of gangrenous intestine. The convexity of this loop was covered with a patch of decomposing lymph, which was removed, and the wound cleansed with peroxide of hydrogen, and made as sterile as possible. The smallness of the canal, the extensive adhesion, together with the friable condition of the intestine, rendered an exploration with the finger a matter of doubtful expediency. With a director the adhesions were carefully separated and the gut gently drawn down sufficiently to reveal the extent of the necrotic area, which was shown to be fully two inches.

The difficulty of deciding as to what method of treatment to pursue now was at once made apparent by the small field of operation, and the very limited amount of intestine at my command.

To further facilitate drawing down the intestine, I now incised the constriction and was enabled to bring down just enough healthy tissue on each side of the necrosed portion to allow of the application of McLaren's clamps.

The question of the use of the Murphy button arose but was discarded for the reason that it would be impossible to reduce the increased mass through the ring without injury to the attenuated bowel unless an extensive enlargement of the ring was made, which seemed unwarranted. There was so small an amount of available intestine and so contracted a field of operation that I was obliged to remove the clamps and for the same reasons the classical Maunsel's operation was impossible. Two alternatives were left, viz.: an artificial anus, or an end to end anastomosis in the best way possible. The condition of the patient was such that the prolongation of the operation necessary to do an anastomosis seemed

justifiable, and in consideration of the great inconvenience of an artificial anus, it was decided to attempt the latter, inasmuch as brilliant results have followed recent work in that direction, although we were at the time without definite information on this particular point. The dead portion was removed, and a V shaped incision made in the mesentery without hemorrhage. After the excision the great difficulty of carrying out the operation decided upon was perfectly apparent. The cut ends of the intestine were slightly protruding through the wound, their mesenteric borders in apposition. Interrupted cat gut suturing was begun on the mesenteric border, the first three or four sutures being tied as they were inserted. These sutures were passed through—through the entire intestinal wall. It then became necessary to twist the ends of the bowel around as each suture was introduced, until the mesenteric border was again reached, the balance of the sutures remaining untied until all were in place. At the completion of this stage, the united ends of the intestine lay so deep down in the incision, that the greatest difficulty of the operation was experienced in the introduction of the continous Lembert suture, which was however finally accomplished.

Although the intestine was unusually thin, I am positive that at no time did the needle enter the lumen of the gut. The next step was to cleanse and return the gut to the abdominal cavity. At once I found that any pressure exercised on the gut itself was liable to tear out the sutures, and there was still sufficient resistance encountered to necessitate a further division of the constriction. I even then found that more pressure would be required than was advisable, and at Dr. Strosser's suggestion exerted traction on the sac, at the same time closely applying it to the gut, and was thus gratified to feel it slip away from my fingers into the abdominal cavity.

The sac was then ligated high up and cut off, the wound packed with iodoform gauze, and the patient put back to bed, apparently little affected by the operation, which had occupied something over an hour.

In the after-treatment of the patient, which was administered by Dr. Anderson, I suggested that she be fed entirely by nutritive enemata, and that all attempts to move the bowels by medicines per orem be strictly avoided. To his close observance of these suggestions I ascribe much of the success attendant on the case, coupled with his thorough and careful treatment of the wound. He has given me the following notes:

She passed a fairly comfortable night with little pain.

Feb. 5th—Morning Temp. 99°, pulse 72; evening Temp. 101°, pulse 90.

Some distension of the abdomen and constant vomiting.

Feb. 6th—Morning Temp. 101°, pulse 100.

Abdomen more distended, vomiting continuing with longer intervals.

Evening Temp. 100°, pulse 90.

During the day she had passed some gas, and in the afternoon an injection of turpentine, Sulph. Magnesia and glycerine was given, and a small movement of the bowels followed.

Feb. 7th—Morning Temp. 100°, pulse 80.

She had a very good night and looked bright.

Evening Temp. 99 1-5°, pulse 78.

In the afternoon an enema was given and a good movement of the bowels followed.

Feb. 8th—Morning temperature and pulse normal. Distension of abdomen decreased considerably.

Evening Temp. 99°, pulse normal.

Natural movement of the bowels in the afternoon.

Feb. 9th—Morning temperature normal.

From the fifth day after the operation the temperature and pulse continued normal, with the exception of a few times when there was a slight elevation in the afternoon.

In the first case, that of the epiplocele, I wish to draw attention to the method adopted in the treatment of the stump. It was considered expedient after amputating the omentum just outside the ring to leave the stump in situ for several reasons, and not to attempt its reduction. The adhesions to the canal were firm throughout, the condition of the omentum was strongly suspicious of commencing gangrene at several points, and in the event of death of any portion concealed within the canal, the gangrenous parts would be easily discharged through the external wound without danger of infecting the general peritoneal cavity. Now reduction of the stump would prevent conveyance of poisons from without into the general peritoneal cavity, which had not been opened. Hemorrhage from the stump arising from any cause could be more easily controlled and furthermore the stump would act as an obturator against recurrence of the hernia. The adoption of this method was warranted by the subsequent history of the case to a certain degree.

In looking up the literature of this subject, I find that Dr. Bull of New York lays particular stress upon the dangers of replacement of the omental stump. He remarks that in resection of omentum the dangers of bleeding from ineffectual ligature, the damage to neighboring intestine from faulty application of ligatures and inflammation and abscess of the stump are points of very serious consideration.

Roswell Park in reporting a case of femoral hernia, says, "There are some adhesions between the omentum and the sac. The hernial opening being so small it seems best to ligate the neck of the sac and its enclosed omentum as far up as possible and cut in front of the ligature."

The idea that the omental stump might serve as an efficient obstacle to a return of the hernia proved futile in my case, for soon after the wound had healed, the patient noticed a protrusion which has now attained a considerable size and is undoubtedly an enterocele, easily reduced through a large ring. Notwithstanding this result, for the remaining reasons I believe the method was justifiable in the case, and I do not believe, taking into consideration the surroundings, the age of the patient and the condition of the parts, that so favorable a result would have been obtained by any other method.

Healing in her case was delayed from the fact that silk ligatures were used, which kept up a fistulous tract until they were sought for and removed.

In the second case there was nothing unusual; the gut was in such a condition however that it was a question at first whether it should be returned or not, but after applying warmth and waiting a few minutes, it took on a better color and was finally replaced. The ultimate recovery of this patient was delayed by an attack of malarial fever and the protracted period of excessive heat with which the whole country was afflicted at that time. At the present writing there is no return of the hernia, but the patient still clings to her truss, feeling safer while wearing it, although there is no apparent necessity for its use. She tells me that since the operation she has been much relieved of a life-long habit of constipation.

The interest of this paper rests largely on the treatment of the last case, which has already been thoroughly considered. The conditions found on opening the sac were very bad, strongly suggesting an unfavorable termination.

My observation of these cases and my facilities and time for research in the literature of this subject are limited, but so far I fail to find a similar case reported,

although successful cases of anastomosis in inguinal hernia are not uncommon.

The treatment of this case suggests a point of practical importance. Nothing was given by the mouth to move the bowels for about two weeks but the lower bowel was relieved by enemata after two days, and this was continued until recovery was fully established.

In conclusion it may be of interest to quote a few statistics relative to strangulated hernia. These remarks are of hernia in general, for in my search I fail to find any particular reference to strangulated femoral hernia, and although undoubtedly there have been similar cases they are so infrequent as to warrant my presenting this history.

In deciding upon the method of operation Zeidler of St. Petersburg gives statistics which may be of some assistance. In 289 cases of resection of the intestine without stating the different kinds, there were 49 13-100 per ct. of death, whilst in 287 cases of artificial anus 74 per ct. died, leaving a large balance in favor of the former operation. He states that diffuse peritonitis and profound collapse are the only contraindications to resection. Treves refers to a case of femoral hernia in a woman of thirty-six—the sac containing fecal matter, pus and gangrenous intestine. Gut freely opened, constriction undisturebed. He says—"Death is probable in this case, the recoveries from this condition being forty per cent." Grant gives artificial anus, five recoveries, ten deaths. Return of bowel after it appeared safe, four recoveries and twenty-five deaths. At the Bonn clinic a rule has been established on the results of thirty-three operations to create artificial anus—first—and subsequently anastomosis.

One remaining point of interest in these cases, is the fact that ether was remarkably well borne; examination of urine was possible in the first two cases but not in the last.

HISTORY OF THE FIRST TWENTY-THREE CASES OF GASTROSTOMY,

WITH A SUCCESSFUL CASE BY THE WRITER.

M. M. JOHNSON, M.D.,

HARTFORD.

To Professor Sedillot of Strasburg belongs the honor of first having performed the operation of Gastrostomy, encouraged by the gastric fistulas resulting from accident; as in the case of Aexis St. Martin and Catherin Ross, together with other experiments in the lower animals, proving successful. He presented two papers in 1843, in which he proposed gastrostomy for the introduction of food into the stomach, for those suffering from esophageal stricture.

Sedillot performed his first operation November 13, 1849, on a man aged fifty, under chloroform, who had an epithelioma of the esophagus and was absolutely unable to swallow. A crucial incision was made under the ensiform cartilage, to the left through the skin and subcutaneous tissue. The stomach was pulled out and punctured, into the opening was placed a tube, consisting of two ground halves, with a prominence to retain the stomach in situ. An elastic sound was introduced into the tube and the whole apparatus fastened to the parietes. The stomach was replaced in the abdominal cavity. It sank to an unexpected distance, drawing the tube in after it.

The patient slept well till night when he grew feverish and died at 7 P. M., fifteen hours after the operation. At the post-mortem serum was found in the abdomen around the cut portion of the stomach and in the peri-

tonenm were found redness and ecchymotic spots. Death was caused by exhaustion and peritonitis.

Sedillot proposed two improvements to this operation, first by sewing the stomach to the integument, second by avoiding injection into the stomach.

He performed his second operation July twentieth, 1853, on a woman aged fifty-eight, under chloroform. Incision was made as in the first place, the stomach was drawn out by means of forceps, six sutures were passed through the peritoneal and muscular coats, by which the stomach was then attached to the integument. It was not to be opened till adhesions had taken place. An hour later the patient had an attack of coughing, the sutures gave way and the stomach escaped. It was drawn out again and fixed by Assiline's forceps. The part thus included became gangrenous. The stomach was opened five days later. The patient suffered from chills and died ten hours after the operation.

At post-mortem pus was found in the abdominal cavity. There was a cancerous growth in the esophagus. The patient died from exhaustion and peritonitis.

DR. E. FENGER'S CASE.

Dr. Fenger next operated March thirteenth, 1856, on a patient fifty-five years old, who had a cancerous stricture fifteen inches behind the front teeth.

Gastrostomy was performed. An incision was made from the sternum along the margin of the costal cartilages. Oatmeal gruel was poured into the stomach through a funnel. Patient died fifty-eight hours after the operation from peritonitis.

J. COOPER FOSTER'S CASE.

Dr. Foster operated twice, first on a man aged forty-seven, for epithelioma of the esophagus. Tracheotomy was performed without relieving the dyspnea.

Gastrostomy was performed March twenty-sixth, 1856,

without chloroform, so as to avoid vomiting. An incision two and a half inches long and a little to the left of the median line and two inches below the cartilage of the false ribs, and extending down three inches. A small orifice was made in the stomach. Milk, eggs and rnm were administered, with great relief to the patient who died of exhaustion, forty-four hours after the operation.

Foster's second operation was performed on a boy four years of age, in Guy's hospital. He had swallowed some corrosive poison, which caused a stricture of the esophagus. February thirteenth gastrostomy was performed under chloroform. An incision two inches long was made at the border of the rectus muscle. Some trouble was experienced in finding the stomach. In opening it a large artery was divided reqniring a ligature. The stomach was stitched to the parietes.

He remained comfortable for four days, when he complained of pain in the abdomen. He became collapsed and cold, rapidly sank and died at 2 P. M. on the fourth day. Post-mortem showed that the sutures had given away and general peritonitis had set in.

O. S. HABENSHORN'S CASE.

O. S. Habenshorn performed gastrostomy on a man forty-seven years old, March twenty-sixth, 1857. The operation was well borne. Nourishment was administered through an elastic catheter, milk and eggs were given every half hour. Patient slept four hours the first night. The next day he coughed violently and forced the contents of the stomach ont through the wonnd. Patient sank and died of exhaustion forty-four hours after the operation.

Autopsy revealed an epithelioma in the esophagus.

SIDNEY JONES' CASE.

Sidney Jones operated July fourteenth, 1859, on a woman forty-four years of age, who had stricture of the

esophagus. The incision was made directly downward from the cartilage of the eighth rib. The stomach was fastened to the parietes by five sutures.

Patient died thirty-six hours after the operation. There was no peritonitis. A cancerous growth was found from the pharynx down to the cricoid cartilage.

Dr. Jones' second case was a man aged sixty-one. His first symptom was dysphagia and vomiting. May twenty-sixth a sound could not pass.

September twenty-sixth gastrostomy was performed. Brandy, eggs and milk were administered directly into the stomach. Pulse ranged from sixty to seventy-eight; temperature ninety-eight to one hundred degrees.

He died on the seventh day from pneumonia. At the autopsy scirrhus and encephaloid tumor involved the esophagus. An encephaloid deposit was found in the left kidney.

DR. CURLING'S CASE.

Curling operated on a man fifty-seven years of age, March thirty-first, 1866. Ether was used. Incision was three inches long extending vertically down from the seventh rib. The stomach was fastened to the parietes by five sutures. The patient died thirty-two hours after the operation, from exhaustion. One of the upper sutures ulcerated, the tissues around the incision were discolored. Autopsy revealed epithelioma and fatty heart.

VAN THADEN'S CASE.

Van Thaden operated on a man fifty-four years of age for epithelioma of the esophagus. An incision was made three inches from the ensiform cartilage and to the left near the costal cartilage. Four sutures fastened the lower end of the stomach to the lower angle of the wound. The incision in the stomach was postponed twenty-four hours. Beef broth was frequently administered through

an elastic catheter. Although morphine was administered the patient suffered much pain.

The next morning the temperature was elevated and the pulse accelerated. Patient died forty-seven hours after the operation. There was peritonitis near the wound.

FRANCIS TRAMP'S CASE.

Francis Tramp performed gastrostomy on a man fifty years of age, for stricture of the esophagus, caused by epithelioma. An incision three inches long was made, midway between the costal cartilages and the median line. A tracheotomy tube was inserted, through which stimulants were introduced. Patient died on the fourth day, direct cause not given

ARTHUR E. DURHAM'S CASE.

Arthur E. Durham operated on a man aged seventy for epithelioma of the esophagus. The incision was three inches long, extending down from the eighth to the ninth rib, and immediately over the linea semilunaris.

The stomach was opened midway between the lesser and the greater curvatures. The edges of the stomach were carefully stitched to the integument. Warm water and milk were administered through an elastic catheter, but were soon vomited. At 4 P. M. patient was very low, and pulse feeble; surface of the body cold.

September sixteenth pulse was one hundred and four, respiration forty. He died sixteen hours after the operation from exhaustion and peritonitis.

F. F. MURRAY'S CASE.

F. F. Murray operated on a man aged twenty-five, June twenty-fifth, 1865, under chloroform. The incision was curvilinear. The stomach was incised near the pylorus and fastened by several wire sutures. A tube was inserted at once and beef tea frequently injected. The

patient sank and died in twelve hours. The stricture was caused by syphilis.

JOHN LOW'S CASE.

John Low performed gastrostomy on a woman fifty-one years of age, who had a scirrhus cancer of the esophagus. No solid food had been taken for several months. Chloroform was not used. An incision was made one and one half inches long, and the stomach was attached by four silver wire sutures.

A silver tube one and one half inches long was introduced at once. Patient was doing finely, but died on the third day.

THOMAS BRYANT'S CASE.

Dr. Bryant performed gastrostomy on a man with esophageal stricture. The incision was made along the lower border of the ribs. The cardiac end of the stomach was drawn to the opening and incised.

Patient lived five days. Dr. Bryant said that the operation had nothing to do with the death.

THOMAS SMITH'S CASE.

Dr. Smith operated on a man, March twenty-first, 1872. He was admitted to St. Bartholomew's Hospital in February, 1872, and had suffered from dysphagia for eight months. For fourteen days before entering the hospital he had taken no solid food. Several attempts were made to pass a bougie, but it was always arrested about ten inches from the front teeth. Neither blood nor pus was brought up.

The stomach was opened March twenty-first by an oblique incision on the left side, an inch from and parallel to the lower margin of the ribs. The stomach was found empty, contracted and lying high up under the diaphragm. It was opened on the anterior aspect near

the pyloric end, and was attached by several wire sutures to the margin of the wound and skin.

The external wound was closed above and below the point at which the stomach was attached, with wire sutures and harelip pin.

A large rubber catheter, three inches long, closed at the end and having a lateral opening, attached to an India-rubber shield, was put into the stomach and attached to the belly by a strap. The tube was closed externally by a cork. Cotton-wool was placed on the abdomen and a flannel belt was firmly applied.

There was much dragging on the sutures, so that the abdominal walls were deeply retracted. No blood escaped into the peritoneal cavity during the operation.

The diet consisted of milk, brandy, eggs, and beef-tea. On the evening of the operation the pulse was fifty-five, small and feeble, with pain at the pit of the stomach. Second day there was neither pain nor sickness, pulse seventy-six, tongue moist, and patient slept well. Third day pulse one hundred, no pain, temperature 96°. Seventh day slept well, temperature 99.6°, pulse 120, very feeble.

Eighth day, early in the morning he was seized with severe pain, the cough being very troublesome. He died at 11 A. M., just one week after the operation. The post-mortem revealed extensive peritonitis, and the esophagus was completely obliterated by an epithelial cancer.

The pneumogastric nerve was involved in the deposit. The operator says: "The operation was performed under as favorable circumstances for recovery as one is likely to meet with again. The patient though feeble was not wholly prostrate. There was nothing in the local disease of the esophagus to cause death when it occurred, or even to have contributed to a fatal issue, after the operation had been performed.

There was no difficulty in the operation, no failure of union afterwards, no hinderance to a due supply of

blood, yet the patient died, as has every one who has been subjected to the operation of gastrastomy for stricture of the esophagus."

Durham says, It is doubtful if life has been prolonged by the operation of gastrostomy, performed on account of disease. In conclusion I venture to express my opinion, says the operator, "That with our present knowledge of the dangers of gastrostomy, it is right that they should not be increased when death is at all imminent from other causes than those which can be relieved by the operation."

If the operator would observe that the post-mortem showed an obliteration of the esophagus by a cancerous deposit, involving the pneumogastric nerve, together with the extensive peritonitis, as a direct result of the operation, he would find an abundant reason why this operation should not have succeeded.

WILLIAM M'CORMIC'S CASE.

Dr. McCormic's patient was forty years of age, and was admitted to the hospital March fourth, 1872. He had been troubled with dysphagia for more than a year. Family history good. March nineteenth gastrostomy was performed. Chloroform was not used, but the skin was frozen with ether spray. An incision four inches in length was made, and the stomach was attached to the wound by silver sutures. An India-rubber tube was inserted and left. Patient bore the operation well, but died four hours after. At the post-mortem there was a cancerous growth found in the esophagus. A gangrenous abscess was found on the left lung.

LA GROSS CLARK'S CASE.

A man fifty-seven was admitted to the hospital May second, 1872. He gave a history of having a frequent sore-throat. Family history good.

A hard tender swelling was found behind the thyroid cartilage.

A small catheter could not pass this point.

Gastrostomy was performed May seventh, 1872. Chloroform was not used, but the skin was frozen with ether spray. An oblique incision was made three inches in length. The stomach was attached to the parietes by silver sutures. After the operation the patient suffered from shock, and the temperature fell two and one half degrees. Nourishment was given every two hours. An India-rubber tube attached to a funnel was introduced into the stomach.

The third day after the operation evidence of bronchitis took place. Patient died May thirteenth, six days after the operation. He expressed himself as glad the operation had taken place, as he had felt better since. Post-mortem revealed local peritonitis.

DR. A. JACOBI'S CASE.

Dr. Jacobi of New York performed gastrostomy April twenty-fourth, 1874, at Mt. Sinai Hospital for scirrhus cancer of the esophagus. Ether was used. A solution of soda followed by a solution of tartaric acid was introduced into the stomach to distend it with gas, so as to distinctly distinguish its outlines. Through the lower end of the stomach a curved needle and ligature was introduced and held by forceps. An incision one inch long was made, and the stomach attached to the parietes by eight silver wire sutures.

Wet compresses and bandages were applied, and morphine was given hypodermically. Patient died of exhaustion eight days after the operation.

C. F. MAUNDER'S CASE.

Maunder's case was probably one of the most unsuccessful operations on record. The patient was fifty-seven years old and was operated on for malignant stric-

ture of the esophagus. He was admitted to the hospital July fifth and died October twelfth. Family history was good.

The operation was performed under chloroform. An incision three inches long was made. The operator spent much time in searching for the stomach, and finally made the incision in the transverse colon. Patient died thirty-four hours after the operation.

DR. CALLENDER'S CASE.

Robert E., aged nine, was admitted to St. Bartholomew's Hospital October sixteenth, 1876, for stricture of the esophagus. He was placed under nitrous oxide gas November sixth, at 2 P. M. The stomach was stitched to the anterior wall of the abdomen by silver sutures. The stomach was opened and an India-rubber tube three inches long was placed in the opening, and held there. Patient was under the anesthesia eighty minutes, and died three days and eighteen hours after the operation.

Autopsy revealed malignant stricture of the esophagus.

M. LANNALOGUE'S CASE.

M. Lannalogue of Bordeaux operated on a man aged fifty-nine, on account of an impassable stricture of the esophagus. The difficulty of swallowing had gradually increased for six months so that at last he could swallow but a few spoonfuls of milk.

Gastrostomy was performed, and a fistulous aperture was easily established, which enabled the patient to be regularly fed. He died on the twenty-sixth day, in consequence of an epithelioma of the esophagus, having included perforation and asphyxia.

M. VERNEUIL'S CASE.

Thus far the history of gastrostomy has offered little encouragement to the surgeon. Death seems to have been his only reward.

The facts developed are that the operation has been performed when the patient was so reduced that death in a few days was inevitable.

M. Verneuil appreciated this fact, and through promptness of action has the honor of being the first surgeon to report a successful case of gastrostomy, the history of which is as follows:

The patient, a boy of seventeen years, swallowed by mistake a solution of caustic potash, February twenty-fourth, 1876. For two weeks he suffered from an acute esophagitis; afterwards he was troubled to swallow.

This trouble constantly increased, and on May twenty-fourth he was admitted to M. Verneuil's ward in the Pitti. He was emaciated and could scarcely swallow, and was almost dying of starvation. Catheterism revealed an impassable stricture, two and one half inches below the upper orifice of the esophagus. Frequent efforts were made to pass the stricture.

Convinced that there was muscular spasm in addition to cicatrical tissue, M. Verneuil administered two drams of chloral per rectum, and as soon as the narcotism was complete, the stomach-tube was passed through the stricture without much difficulty. The patient was then able to swallow pap and bouillon.

July tenth the stricture became impassable and finally gastrostomy was performed. July twenty-sixth the patient was placed under chloroform, and an oblique incision about two inches in length was made, parallel to the cartilaginous border of the false ribs. The stomach was reached and at once transfixed and held by two long acupuncture needles. This was done so rapidly that the abdominal cavity was not exposed to the air for more than fifteen or twenty seconds.

Fourteen metallic sutures were then passed through the skin, peritoneum and walls of the stomach. The sutures were about one fourth of an inch apart and were

twisted over a tube of lead. The acupuncture needles were twisted over a tube of lead. The acupuncture needles were withdrawn and a small incision was made through the walls of the stomach. Two jets of blood followed the incision, but were controlled by the hemostatic forceps, which were left in position until evening. The incision was not more than one third of an inch in length. It was held in position by small pieces of tape and collodion applied to the abdomen.

The operation was very simple, and was attended by no accident. The antiseptic method was strictly followed.

For several days subsequent to the operation the patient complained of circumscribed pains in the left hypogastrium, and right shoulder. The collodion caused difficult breathing. The patient was also jaundiced. The sutures fell out spontaneously.

The patient was fed through the catheter. August twentieth he was able to get up. September tenth the fistula was rounded and encircled by a border of mucous membrane. He had then completely gained his strength. On August eighteenth he weighed seventy-five pounds, and on September fourteenth he weighed eighty-six pounds. He experiences hunger, and feeds himself on all sorts of food. After the injection of food the flow of saliva is increased. It is probable that in the course of time he will have to feed himself entirely by the gastric fistula, during his entire life.

DR. JOHNSON'S CASE.

Mrs. Dora Schifmann, Russian, aged thirty-eight, married and has five children. Mrs. Schifman consulted me at my office May twentieth, 1898. She gave a history of having had an increasing difficulty in swallowing for the last three months, and that she had been unable to swallow anything, even liquids, during the last three days. I passed a bougie with number one bulb without difficul-

ty, until it came to about one and one half inches of the stomach. There was a stricture through which the bougie passed with much resistance. The next day, May twenty-first, I passed a number one and two, which was followed by a slight hemorrhage. After this she could swallow liquids if taken in small quantity. May twenty-three I tried to pass a number three, but was unable to do so. May twenty-four I passed a number one and two. I was then out of town and did not pass the bougie till May twenty-eight. During this time the stricture had closed so that a number one passed with difficulty, following which there was quite a hemorrhage. May twenty-eighth and twenty-ninth she could not swallow anything. Since then I have passed a number one and two daily, and she was able to swallow liquids, if taken slowly.

June second, 1898, Mrs. Schifmann was admitted to St. Francis Hospital. She being very anemic, was placed on a diet of beef juice and milk, and later raw egg was added. She was given Potass. Iodidi commencing with five grains and increasing three grains a day.

June tenth, the Hemoglobin test was made, giving blood eighty-five per cent., June twenty-seventh ninety per cent. From June twentieth to twenty-third she could not swallow liquids. The blood-test was then seventy per cent.

June thirtieth.—She had been able to swallow better for three days and had less pain in the stomach.

July seventh.—She has been unable to swallow liquids for the last three days. An operation for her relief has become necessary.

Gastrostomy was performed July eighth, 1898. Drs. Parsons and Alcorn, from Thompsonville; Dr. O'Connell, from East Hartford; Dr. Donoghue, from Holyoke, and members of the staff were present. Dr. Johnson was assisted by Drs. Boucher and Sullivan.

When the patient was on the table the abdomen was much retracted, as she had taken no nourishment for three days. The operation of "Sebanijew and Frank" was performed, an incision four inches long, extending from the xiphoid appendix, parallel with, and a little less than two inches from the costal cartilages of the left side.

The stomach was easily secured, and after an examination of the distal end of the esophagus was made, showing a hard fibrinous induration, a portion of the stomach was drawn out through the incision, and retained by a suture passed through the serous and muscular coats of the stomach. Then the peritoneum, including the sheath of the rectus muscle, was stitched to the peritoneal coat of the stomach with a number three catgut suture.

A second incision was made through the integument one inch above the first incision. The integument being raised was carefully dissected so as to connect the two incisions. The suture already passed through the coats of the stomach, was drawn through under the skin flap, dragging a portion of the skin flap with it. The first incision was now closed with catgut sutures. In the portion of the stomach drawn through the second opening, an incision was made, three fourths of an inch in length. The edge of this incision was stitched to the integument, with a silk-worm gut suture. The usual dressings were then applied.

She bore the operation well, and rallied from the ether in good condition. Next morning, July ninth, pulse was seventy, temperature 98.20°. Milk and beef-juice were given through a tube every two hours. The tube was inserted only when she was fed. The highest temperature following the operation was 99.30°.

From this time on she took nourishment through the fistulous opening, slept well and the bowels moved nor-

mally. July twenty-fifth she sat up. August ninth she took solid food, in the form of finely cut beefsteak, bread and mashed potato, which was passed through the glass tube into the stomach.

During all this time she had complained of much pain and discomfort in her back, in the region of the cancerous growth in the œsophagus.

August eleventh she left the hospital. At home she did not receive the careful attention, which she had at the hospital, yet she regained her strength so she came to my office several times. In October she went to New York to consult Willy Meyer, and other surgeons, who told her for the first time, that she had a cancerous growth of the œsophagus, for which there was no help. As the cancerous growth progressed she gradually failed and died January first, 1899, five months and twenty days after the operation.

The foregoing history of twenty-three consecutive unsuccessful operations for gastrostomy is significant from the fact that with one exception, they were performed by the ablest surgeons of the world, who had special surgical training, and abundant operative experience. We can better appreciate the status of surgical opinion by briefly quoting from the writings of those pre-Listerian days.

Mr. Bryant of London, a well recognized authority in surgery, says: "Hitherto the operation has been unsuccessful, because it has been put off till too late a period, in the same way that colotomy was unsuccessful till it was performed in an earlier stage of the disease."

Mr. Lannelongue sums up the operation as follows:

(1). Gastrostomy is a rational operation, founded on the history of gastric wounds and fistulas, produced experimentally in animals, and accidentally in man.

(2). It is indicated whenever aphagia renders death from inanition imminent.

(3.) The operative procedures should be conformable to the rules indicated by Prof. Verneuil, one of the principal of which is, not to open the stomach until after having fixed it to the abdominal wall, by the careful application of numerous points of suture, in order to prevent any effusion into the peritoneal cavity.

(4.) The incision should not be carried below the reach of the inferior edge of the eighth costal cartilage, so as to reach the anterior wall of the stomach, which after long fasting is always shrunken and drawn up towards the diaphragm.

(5). The stomach should be opened near its small curvature, so as to allow space enough in a dependent position for the accumulation of the secreted and injected fluids.

(6). Nor should hemostatic forceps be applied to the gastric orifice nor should the tube left in be fixed by threads. These mean risk of laceration and mortification, which may give rise to enlargement of the fistula, and escape of the fluids.

These opinions bear the imprint of sound logic, and indicate a thoughtful interest on the part of the surgeon. The fact that the great majority of the patients died of septic peritonitis, shows that the germs of death were innocently planted in the abdominal cavity at the time of the operation.

It was not, as Mr. Bryan said, a question of "Too late," but, "Too septic." The successful surgeon of to-day depends on two conditions—asepsis, and improved technique.

A CASE OF RENAL CALCULI WITH OPERATION.

M. Storrs, M.D.,

HARTFORD.

The following case is related not so much as a rare disease, but to illustrate the success of treatment in some of the severe cases of renal disease.

Mrs. K——, a German woman forty years of age, was admitted to the Hartford Hospital July 19th, 1898, having the following history: Father and mother died of consumption; patient had had four children; last confinement in 1888; she had had four attacks of Grippe. Eleven years ago passed a calculus on urination about the size of a white bean—attack began with nausea and pain in the right side of abdomen and back—a sharp pain radiating downwards to the right leg, nausea followed by a chill and fever, and during the fever the calculus passed, fever subsiding rapidly. Subsequent to this had sharp pains in back, urine reported normal.

Her recent trouble began July 5th, nausea and backache; went to bed; five days after had a chill followed by fever, pain in right lumbar region and on right side of abdomen; tender upon pressure. She states that there was a deposit of a thick, creamy sediment in urine. Under treatment showed no signs of improvement, and entered the Hospital July 19th. Pain in right lumbar and right iliac region, radiating downwards to the thigh. Examination found fullness, dullness and tenderness on pressure in those regions—urine 1006, acid, and five per ct. albumen. Pus and blood cells in sediment. Tem. 102°, P. 140. Diagnosis previous to entering Hospital, ovarian cyst. Present diagnosis, disease of a renal character—hydronephrosis, pyonephrosis, or possibly a resulting pyelonephritis. There had been no evidence of

infection or of malignancy. But the early history pointed to a calculus origin of the trouble.

July 22nd, Tem. 102°, P. 120. Operation. Incision in right lumbar from rib to ilium. Pelvis of the kidney opened, pus estimated at two quarts, evacuated. Exploration revealed an imbedded calculus which was removed with difficulty; supposed at the time to be in the opening of the ureter, but so low down that this could not be determined with certainty, being seven or eight inches below in the right ilium. The calculus was of a phosphatic character. No other calculus was detected. The cavity was cleaned out and drained. Patient recovered very well from the shock. The following day, Tem. 99°, P. 100. And so continued with slight variations for nearly a month. The urine was about the same as before the operation, showing pretty conclusively that the ureter was still impervious.

August 19th, about four weeks from the first operation, upon dressing the wound and inserting probe, another calculus was felt. Opening the wound, dilated, but the calculus was too firmly fixed to be removed.

August 20th, a second operation was performed. A large, hard tumor could be felt down in right ilium. The former vertical incision was opened and enlarged by one horizontal. Kidney explored; the parts seen appeared healthy; the kidney was incised to loosen the calculus which was partly crushed in removing. Other calculi could be detected in other parts of the kidney which were approached and removed in the same way, incising and tearing the kidney; considerable sand or gravel was also scooped out. The kidney was much torn and divided in extracting the calculi located in the calyces and tubules of the kidney. For a time the patient was in a critical condition but rallied. Subsequent dressings showed gravel; later, pus and gravel passed from the bladder, showing that the plugging of the ureter was removed.

No more calculi have been detected; wound is clean and filling up each day. Dullness in iliac and lumbar region has disappeared. Patient now has a small fistulous opening lessening gradually; good digestion; bowels regular.

The first operation was a nephrotomy for an exploration, evacuation and drainage. Any attempt to remove so large a tumor or adherent cyst would have been impossible. The second operation was a nephrolithotomy; each calculus was imbedded in renal tissue and required incision or laceration. A renal excision could hardly have been done safely at this time, such was the extent and adherency of the cyst walls. From the present outlook no nephrectomy will be needed, and the case stands as illustrative of how much mutilation the kidney can sustain and its integrity be conserved.

A CASE OF FRACTURE OF THE CERVICAL VETEBRAE WITH RECOVERY.

Joseph E. Root, B. S., M.D.,

HARTFORD.

Mr. R.—age sixty-eight, weight two hundred and nineteen pounds, blacksmith by trade. On July 1, 1898, while in the fields finishing off a load of hay, the horses suddenly started forward pitching him over the rear of the high load. In falling backward he struck squarely on the head, and, with such force that it was driven into the soft ground up to the ears. When taken up by the workmen he was found to be utterly helpless, but his mind was clear, the local organs being under full control.

Feeling that he was paralyzed, and thinking he had but a short time to live, he dispatched a man for his wife. On her arrival at the scene of the accident he immediately told her his neck was broken and that he could not live. He then proceeded to give his last instructions as to where his will could be found, the name of its executor, also directed the disposition of certain properties. Having made clear his wishes, he then consented to be removed to his home, which was accomplished in an express wagon, his idea seeming to be that, as in course of removal he might die, so he wished, before taking any more chances, to set his affairs in order.

At 6 o'clock P. M. I was called to attend a man alleged to have received serious injuries through falling from a load of hay. On arriving at his home I found the patient bolstered upon a lounge, absolutely unable to make any muscular movement, although able to speak intelligently. Upon examination of the man's arms and shoulders I found no fractures or dislocations—but entire



paralysis of the muscles. My attention was then directed to the neck which I found very painful to the touch, the head having seemingly been driven into the body.

A marked irregularity was found on the line of the upper cervical vertebrae, an apparently angular protrusion at the juncture of the first and second vertebrae.

The total paralysis of all muscles below the point of injury, together with the condition of the cervical region, convinced me that I had a case of "man with a broken neck"—or impacted fracture of the cervical vertebrae.

Realizing that the only means of reducing the injury was by extension, I braced myself firmly, and placing my hands under the maxillaries, with fingers on the cervical region, I made powerful traction upon the head, combined with manipulation of the injured parts, and to my great surprise the man began to exclaim: "That's bully! I feel better, look here! I can move my hands."

I then made still further extension with the result that in like manner the man found he could move his feet and limbs. After slight continued manipulation he was able to move all the muscles in his body. After placing the neck in temporized splints braced from the shoulders in such a manner as to keep up the extension, he was able to rise from the couch, and, being steadied and guided, walked up stairs.

On the afternoon of the ensuing day I put the head, neck, and shoulders in a plaster cast, which is here exhibited.

The following day, Dr. Ansel G. Cook saw the case with me, the cast was cut down, and lacings put in, they being so arranged as to admit of its being easily taken off for the purpose of bathing.

By an arrangement of pads between the cast and the top of each shoulder, the requisite amount of extension was steadily kept up, thus avoiding the ordinary system of extension by pulleys, or jury mast.

For a period covering twenty-nine days the cast was worn constantly, during all which time the patient was able to move about. Very little medication was required save a slight exhibition of the bromides. At present the man is in normal health, but, there are three clearly defined conditions existing which mark the result of the injury.

First—A shortening of the man's height three-quarters of an inch.

Second—An enlargement of the circumference of the neck by one and one-half inches.

Third—Inability to perform lateral motion of the head, but freedom in the antero-posterior.

There is comparatively slight ankylosis; lateral motion to the extent of 30° can be made—but, not produced voluntarily.

The patient, who has been engaged, uninterruptedly, in his usual avocations, since two months after the accident, I now present for your examination.

REPORT OF A CASE OF INJURY TO THE SPINAL CORD,—DIAGNOSIS AND AUTOPSY.

Ida Gridley-Case and J. L. North.

On the twenty-first of January, 1899, Mr. G., a farmer, sixty years of age, while aiding other men in raising a barn on his farm, was struck on the back by the falling over of the last "bent," and knocked down into a squatting position. When picked up he was conscious. One bystander said he noticed convulsive movements of the lower limbs. The paralysis and shock were so great that a physician who happened to be in the neighborhood, and was called in to see him immediately, was reported to have said that Mr. G.s back was broken and that he would in all probability die within twenty-four hours. The family soon afterward sent for me. Their family physician and I arrived about six hours after the accident happened. I found him then partially recovered from shock, pulse strong and not rapid, and suffering no special pain. He could make very feeble contractions of the posterior muscles of the limbs, but not of sufficient power to move the limbs. Below both knees there was total anesthesia. I directed him to be turned upon one side and examined the back. I found no deformity, no crepitus, no ecchymosis. There was no severe pain in the back, indeed I may say that pain was never a prominent symptom in the case. I scarified the back in the lumbar region, cupped, and applied ice-bags, gave a hypodermic of morphine to quiet restlessness, and ordered external heat and stimulants for the shock. He had vomited once before I came, but did not vomit after my arrival.

About twelve hours later sensation had extended to a

distance of eight inches below the knees, and he could move the right limb a little, but the left not at all. There was retention of urine and paralysis of the lower bowel, though the sphincter ani still retained a little power. I noted twenty-four hours later that sensation had returned very slightly as far as the toes, and that there was increased motion in the right limb and a slight degree of motion in the left. At this time I found five spots of trophic disturbance in the form of blisters, "neuropathic eschars," of Brown Sequard,—one on each foot, one on right knee, and one on each hip, all situated on points free from pressure. All these blisters disappeared under simple, unirritating treatment without forming sores or sloughs. One developed subsequently on the left foot in the fifth week after injury and was followed by sloughing; but was partly healed at the time of the patient's death.

The retention of urine necessitated the use of the catheter at regular intervals. I endeavored to prevent cystitis by directing careful sterilization of catheters, and the utmost gentleness in their use; but cystitis developed on the tenth of February, nearly three weeks after the injury. At this time fecal impaction occurred. Various kinds of laxatives had been used; but the bowels failed to respond to them owing to almost complete paralysis. Saline laxatives caused vomiting, and could not be used.

Up to this time there had been a slow but constant improvement in the motion of both limbs, notwithstanding a gradual emaciation of the whole body was going on, but now he became so weak that this improvement ceased.

For a number of months previous to this injury his appetite had been capricious; natural desire for food had been wanting, although he would at times eat as heartily as ever. Often he would vomit after taking food. He suffered also from a profuse catarrh of the nose and

throat. After his spine was injured he had almost complete loss of appetite. After the development of cystitis his stomach became so irritable that at times he could take no food or medicine without vomiting. His heart became very weak, and collapse came on five or six times, from which he was revived only by the use of strychnia and stimulants hypodermatically. In the commencement of the cystitis I was unable to give him proper treatment for nearly a week because the roads were blockaded by snow. When I reached him I found apparently an ulcerated condition of the bladder, large quantities of clear and clotted blood and pus passing with the urine at each catheterization. The odor of the urine was at one time distinctly gangrenous. At this date, February seventeenth, I sent a trained nurse to care for him. By strict asepsis, and washing out the bladder with mild antiseptic solutions, the blood soon disappeared from the urine, and the pus and mucous lessened, but never entirely ceased.

By the use of calomel and strychnia the patient obtained good movements from the bowels, and regained sufficient control over the rectum to partially empty it himself. The nurse gave him massage daily, and he became able to move his right limb quite freely, his left somewhat. The one troublesome feature was his loathing of food. He could not be forced or coaxed to take it in sufficient quantities. Sometimes an hour or two after taking food he would vomit a small quantity of clear emerald green, foul-smelling liquid. At no time did he vomit a great quantity. In spite of the small amount of nourishment he was taking his heart became stronger, and he was able to sit up three times fifteen or twenty minutes without causing fatigue. The loathing of food and vomiting increased until he could take no nourishment. He sank into a moribund state in which he lingered four days, and died March fifteenth.

A few words are now needed in regard to my diagnosis of Mr. G.s case. When I first saw him I thought the rather indefinite term, "concussion of the spinal cord," might explain satisfactorily most of the symptoms from which he suffered. I was certain then that no fracture existed unless it were very minute. As time passed I thought the symptoms of paralysis and anesthesia were more definitely explained by considering that a slight dislocation between two or more vertebrae of the dorso-lumbar region had occurred, and that a hemorrhage had taken place in this region either into or around the cord. Of this latter I was certain, because of the steady improvement up to a certain point in sensation and motion. I became more positive that a dislocation existed, for his symptoms pointed to a continuous, severe pressure upon certain areas of the cord.

I also observed that the normal depression between the last dorsal and first lumbar vertebrae became filled out and the surface presented that swollen, tense feeling accompanying a synovitis. Toward the end this swelling disappeared.

The serious gastric complication I never considered reflex, i.e., caused by the injury to the spinal cord, but thought it might be cancerous, or of septic origin, as Mr. G. had suffered from an obscure and very severe form of blood-poisoning six months before he was injured.

By request of the family an autopsy was performed by Dr. Carver of New Hartford, and Dr. North of Avon, assisted by myself.

Dr. North has kindly written the report of the autopsy.

AUTOPSY.

Report of the autopsy in case of Mr. G., thirty-six hours after death: The subject was very much emaciated indeed. Rigor mortis well marked but post-mortem changes were not well marked.

We carefully dissected away the skin and subcutane-

ous tissues covering the region of the back, extending from above the eighth dorsal to the third lumbar vertebrae, and the first thing of note to attract our attention was the softened condition, almost a fatty degenerative condition of the muscular tissue lying adjacent to the tenth and eleventh dorsel vertebrae and the absence of the interspinous and supraspinous ligaments of the spinous processes of the dorsal vertebrae from the eighth to the eleventh.

After cleaning away all soft structures covering the spinous processes and laminae of the above-mentioned vertebrae we dissected out and removed a section of the spinal column from the eighth to and including the eleventh dorsal vertebrae. Then sawing through the laminae into the spinal canal on each side, the canal was opened up for inspection. There were presented marked signs of a large hemorrhage into the canal outside the membranes and which seemed to have undergone partial absorption. There was also a large collection of yellow fluid in the arachnoid cavity between the eighth and eleventh dorsel vertebrae. A dislocation of the tenth dorsal vertebra was now plainly to be seen causing much pressure upon the spinal cord which showed marked softening at the point of pressure.

We made no microscopic examination of the cord or membranes. There was marked ankylosis of the articulations of the tenth dorsal vertebra.

Upon opening the abdominal cavity we found the gall-bladder enlarged although both the cystic and common duct were patulous clear into the duodenum. The stomach was very much enlarged, about four times larger than normal and contained about a half pint of a thick greenish liquid which was very offensive. There were several ecchymotic spots on the mucous membrane of the stomach, also several stellate hemorrhagic spots, but no signs of ulceration or hemorrhage. The lungs and heart were not examined, neither the kidneys.

A CASE OF APPENDICITIS, WITH PATHOLOGICAL SPECIMEN.

JOHN H. ROSE, M.D.,

HARTFORD.

The case to which I wish to call your attention, briefly, is one of extreme interest, it seems to me, to every man here present whether he considers himself specially a Physician or a Surgeon.

Mr. M., aged fifty-four, American, married, father of three grown children; good family history, rather delicate in appearance but always able to perform ably his work of gasfitter, of excellent habits, presented himself at my office on Sunday, May seventh, suffering from a pain in the right iliac fossa. The pain was not very severe but was increased by pressure. He had no constipation worthy of mention, had suffered no symptoms of vomiting or even nausea and could complain of little other than his pain, loss of appetite and a bad taste in the mouth. His oral temperature was about 100° F.

At that time I questioned him closely as to the possible occurrence of previous attacks of a similar type, and was able to get at the best, only a doubtful history of an attack of "Cholera Morbus" lasting only a few hours, about two years ago.

I palpated the abdomen and thought I could detect a swelling in the region of pain and tenderness. Small doses of calomel and soda were ordered to be followed by a mild saline laxative.

On the following day he again called at my office presenting the same picture as on the day previous with perhaps a little more pain and tenderness and a slightly

higher elevation of temperature. On this day he had been pursuing his regular work. There had been no result from the calomel and saline. Further attempts to secure an evacuation of the bowels by ordinary methods were abandoned. I advised rest in bed and gave him a small dose of morphine to be used for pain and as a hypnotic and told him I would call to see him the next day. On Tuesday, May ninth, I found the patient in bed, resting quietly and comfortably, temperature 100° F. by the mouth and 101° F. by rectum.

Up to this time I could not be sure that any serious condition existed within the abdomen, judging from the mild character of the symptoms present.

His abdominal walls were exceedingly thin and the swelling could be mapped out at this stage with a fair degree of certainty.

At this point I called in consultation my friend, Dr. O. C. Smith, and we decided to give an enema and await results. If the patient were no better on the following day we decided an operation necessary. On Wednesday, May tenth, we found his condition in no way improved and immediately prepared for the operation.

At twelve o'clock, noon, the patient was etherized by Dr. Geo. N. Bell and after the usual antiseptic precautions had been carried out appendectomy was performed by Dr. Smith, assisted by myself.

I shall not describe the details of the operation but will show you the specimen, which is a peculiar one. The appendix is evidently a double one and when found was distended with pus and presenting a perforation which you can plainly see on one side. Pus was exuding from this perforation. The appendix when first removed measured about three and a half inches in length and two and a half to three inches in circumference. The peritoneum was highly injected and proved exceedingly soft and friable when attempts were made to bring the

edges into apposition. No adhesions or exudate existed and it would seem fair to assume that a general septic peritonitis would have promptly followed had not surgical interference been instituted. The point I wish to emphasize particularly is the great discrepancy that existed between the clinical aspect of this case and the actual condition as found by the operation. Here was a man up and about his regular business, with mild symptoms, and a slight elevation of temperature, yet carrying within his abdomen a large appendix distended with pus which was oozing from a perforation. The wound was closed in the usual way and a slight amount of drainage left. The patient is sitting up to-day and to all appearances on the high road to future health. I have thought it wise during these days when the medical treatment of appendicitis is so much extolled to relate the history of this case to you.

I am greatly indebted to Drs. Smith and Bell for their valuable counsel and assistance and I wish to thank you, Mr. President and gentlemen, for allowing me the privilege of thus encroaching upon your valuable time.

MEDICOLEGAL PAPERS.

INSANITY IN ITS MEDICOLEGAL RELATIONS.

GUSTAVUS ELIOT, A.M., M.D.,

NEW HAVEN.

A physician practicing in Connecticut may be required to express his opinion, in a court of law, in regard to the mental status of an individual under different circumstances. Most frequently he is called upon to appear in the court of probate, after having examined a person alleged to be insane, and to testify whether in his opinion the person is insane and should be confined. Less frequently he is summoned to testify in one of the criminal courts in regard to the mental condition of an individual, who has committed some crime, but who, if found by the court to be insane, will for that reason escape incarceration in jail or State prison. Rather infrequently he is asked to express his opinion in the civil courts in regard to the mental capacity of an individual to make a will, or to execute other legal papers.

The Legislature of 1895 passed "An Act Concerning Insane Persons," which went into effect on the first day of August of that year. By this act the commitment of insane persons to asylums is vested in the court of probate. This court exercises jurisdiction upon written complaint, which may be made by anyone, that a person "is insane and is a fit subject to be confined in an asylum." At the time and place assigned for hearing the complaint, "the court shall require the sworn certificates of at least two reputable physicians * * * that in their opinion

such person is insane and a fit subject for confinement in an asylum."

There are one hundred and twelve probate districts in the State of Connecticut, and an equal number of judges of probate, who by this act have authority to hear complaints, and to commit insane persons to asylums. Most of these judges are lawyers, but a few are not. One at least is a physician, a former member of this Society. It is not strange that so many different men should carry out the law in somewhat different ways. In most cases however it seems to have fulfilled admirably the purposes which it was designed to accomplish, of furnishing a uniform system of promptly committing the insane to asylums, of doing it with proper regard to the rights of the individual, and of avoiding committing anyone who is not actually insane. Public scandal has arisen, so far as is generally known, in only a single case, which occurred in Hartford. The experience and observation of the writer have been limited to the single district of New Haven, which includes several towns and a greater population than any other district in the State. One lawyer has presided over the court continuously since the law went into effect.

It is expressly provided that the two physicians whose sworn certificates are required shall be "reputable physicians, * * * graduates of legally organized medical institutions," who have been practitioners of medicine for three years within this State, and not connected with any asylum, nor related by blood or marriage to the complainant, nor to the person alleged to be insane." The judge, as the law directs, appoints one of these physicians, and usually selects some one who has not been suggested by any of the interested parties, and who has not hitherto had any connection with the case. He also, as the law does not direct, often appoints the other physician, selecting some one suggested by the friends of the

person to be examined, generally the physician who has been attending the patient.

A large number of insane people are classed either as indigent persons or as paupers. An indigent person is supported in part by the State, and in part by himself or his friends. A pauper is supported in part by the State, and in part by the town in which he belongs. These two classes of insane persons in accordance with an act passed sixteen days earlier than the one from which quotations have been made, and which went into effect on the same day as the latter, may also be committed to an asylum by a judge of probate, under conditions not very different from those which have been mentioned, except that it is directed that the judge shall appoint two physicians to make the examination, whose only necessary qualification is that they shall be respectable, and who report to the court after fully investigating the case, but are not required to present sworn certificates.

So much has been said and written in condemnation of the practice, which has prevailed in securing the testimony of physicians as experts, of each of the opposed parties employing physicians to testify in their respective interests, that it will be instructive to inquire what has been the result of leaving the power of the appointment of medical experts in the hands of the judge. Probably no court will ever have a more honorable or a more conscientious judge than the court of probate of the district of New Haven has had for the last four years. He has had as much opportunity as any judge is likely to have of knowing the scientific and moral qualifications of the physicians in his district. The experience there may fairly be regarded as an illustration of the best result which is likely to be obtained by entrusting the appointment of experts to a judge.

In the commitment of the large number of insane people classed as indigent persons and paupers, it is the duty

of the town officials to take an active interest. Consequently it happens that the town physicians are appointed to examine many of these subjects, the judge usually following the custom of allowing the interested parties to suggest one physician, and the town officials naturally suggesting a town physician. As the other examiner some disinterested physician is appointed. What circumstances, besides their disinterestedness, influence the selection of these physicians it would be difficult to tell. If it is made in accordance with any definite or fixed principles, it is impossible, after considerable interested observation to discover what they are.

Leaving out of consideration the town physicians, who obtain and hold their positions through political influence, it would not be easy to prove that the political affiliations of a physician influence the frequency with which he is appointed to examine persons supposed to be insane. On the contrary there have been whispered complaints among a few physicians because they have rarely, or never, been appointed, although belonging to the same party as the judge. Nor do age and experience seem to be especially regarded in making these appointments. In fact it has been remarked that some of the younger men have been often selected. Furthermore, it does not appear that those physicians are called upon with especial frequency who are known to have taken more than usual interest in mental diseases, or who have studied the subject with more than usual enthusiasm and thoughtfulness. On the contrary, it would not be surprising if an impartial inquiry should show that the opposite was the rule, with few exceptions. For instance a homeopathic oculist was appointed to examine an insane woman who had been under the writer's care, and concerning whom he also was permitted to testify.

Passing now from the appointment of physicians, a few remarks must be made concerning the manner in

which their testimony is received. On appearing in court the physician is asked if he has examined the individual alleged to be insane, and what opinion he has formed. If the opinion is expressed that the person is insane, the questions are then asked: Why do you think that he is insane? What did he say or do which leads you to think that he is insane? Of course, in most cases, the person whose mental condition is the subject of judicial investigation is so manifestly insane that a brief relation of his acts and of his conversation is sufficient to convince any one of the nature of the case. But in all cases the judge seems to desire not only to hear the opinions of the physicians, but also to learn on what facts these opinions are based. In other words he seems to consider it his duty to decide whether the symptoms observed by the physicians in any particular case indicate insanity.

In the cases which come within the jurisdiction of the court of probate, under the act of 1895, there is rarely much controversy. But both in the probate courts and in the higher civil courts there occasionally arise contests of considerable activity as to whether a person who has made a will, or who has executed other legal papers, was in his right mind at the time when he signed the papers in question. In these cases the parties to the litigation employ physicians to give expert testimony in regard to the mental condition of the person the legality of whose acts is questioned. The first thing which is considered by the litigants is to find a physician who will give such testimony as will benefit the side which employs him. The next consideration is to find a man who, while ready to give the desired testimony, will also, on account of his public reputation, and by his manner in the witness-box, influence the judge and the jury to believe that he thoroughly understands what he is talking about, and that he is telling the truth. These cases sometimes afford opportunity for the expression of surprising differences of

opinion by eminent and honorable members of our profession.

But it is of criminal cases, in which the defense of insanity is made, that the newspaper-reading public hear the most, and in regard to which their interest is most strongly aroused. In these cases a great deal depends upon the attorney for the State, who examines the evidence against each prisoner, and presents it to the court in such a way as he believes will best secure justice to all parties. Ample provision is made that the accused shall have every opportunity to maintain the innocence of which our gentle laws assume him to be possessed.

Occasionally a man is arrested for some alleged crime of moderate gravity, such as being a tramp, who, in the opinion of the officers and others who see him, shows indications of insanity. It may be known to some of them that he has previously been confined in an asylum. Under these circumstances the attorney for the State may ask one or more physicians to examine the prisoner, and to testify in regard to his sanity. If the judge, who presides at the trial, is satisfied that the prisoner is insane, he may direct the jury to return a verdict of "not guilty on the sole ground of insanity," and may then commit the prisoner to any asylum. Cases disposed of in this way are usually comparatively trivial.

On the other hand, it occasionally happens that a man commits a crime of striking folly or atrocious fiendishness, which entitles him to severe punishment. In these cases, when there seems to be no reasonable ground for defense, and no loop-hole for escape, it is a rather common expedient with criminal lawyers to set up the defense of insanity, and to introduce physicians to testify that, in their opinion, the prisoner was insane when he did the criminal act for which he is on trial. This is illustrated by the following:

CASE.—CHARGE OF FORGERY. DEFENSE OF INSANITY. A young man of good family was arrested for forging the name of a recent acquaintance to a check, and was bound over to the Superior Court. He seemed to be on the straight road to State prison, and not very far from it. Physicians were employed to examine him. After repeated interviews, in the intervals between which he was visited frequently by his attorney and other friends, it began to appear that he had delusions that considerable property belonged to him, and that his devoted mother was wronging him, by not allowing him to spend it. The concurrent testimony of several highly reputable physicians that he was insane saved him from being sent to State prison. There was such unanimity of opinion among all the lawyers and physicians concerned in the case, as to what disposition should be made of the accused that the court was not delayed by a discussion as to whether he had the delusions at the time when he forged the check, or whether at any time the delusions were genuine.

There was read at the last meeting of this Society, by the distinguished psychiatrist who does us the honor of presiding over our present discussions, a report of the case of a man who, in a single afternoon, shot and killed two women, one his wife, the other his mother-in-law. It is rather peculiar that there has never been opportunity for the public expression of any difference of opinion in regard to this case. At the time when the paper was read the presiding officer invited no discussion upon it, and at the time appointed for the trial of the prisoner there was essential agreement between the lawyers engaged in the case and the doctors who had been invited to examine him. With as little formality as possible this man was relieved from the necessity of expiating his crime with a rope around his neck, but was sent to the hospital provided for those who are afflicted with mental

diseases, in the delightful County seat of Middlesex. My connection with this case was limited to the making of post-mortem examinations of the bodies of the two women who were killed. Consequently I am not prepared to express any opinion in regard to the man's mental condition. But even if I had examined him, and had reached the conclusion that he was not insane, I am sure that every gentleman present would consider me presumptuous, if I ventured to express an opinion at variance with that of the respected and conscientious alienist and the no less distinguished surgeon to whom, by the grace of judge and attorney, this multi-woman-killer owes his precious life. I must confess, however, that I have never been able to entirely smother the suspicion that, if this case had been prosecuted with the same energy which the same attorney for the State has exhibited in many other cases, the outcome for the prisoner might have been very different. He certainly would have passed a good many hours of uncomfortable suspense while the testimony was being given, while the lawyers were making their arguments, while the judge was giving his charge, and while the jury were trying to agree upon a verdict.

Far be it from me, while expressing this sentiment, to cast the slightest shadow of doubt upon the sincerity and honesty of purpose of any of the honorable gentlemen who were connected with the case. But such thoughts as I have expressed will, I am sure, not seem so very strange to you, if you will go back not quite eighteen years in the history of medical jurisprudence, and recall the case of Charles J. Guiteau, who shot a President of the United States, and inflicted wounds which ultimately proved fatal. You will recall how acrimoniously this case was discussed by students of mental disease of the greatest learning, the most extensive experience, and the most honorable reputations; and how men of this character gave directly opposite testimony, and how the jury

found the prisoner guilty of murder, and how he was put to death. There is little reason to question that those men were equally learned, equally respected, and equally honest, but their opinions differed widely, and the decision of the jury, which met the approbation of nearly every one, resulted in the death of the accused.

Somewhat later, in Connecticut, a man became intoxicated and with a club inflicted such injuries upon his hired man that the latter soon died. The survivor of this little episode was arrested and taken to the county jail, where after he had learned of the death of his victim, he began to act in such a manner as to indicate that perhaps he might be insane. A young physician who had examined him testified that in his judgment the prisoner was not insane, while two older physicians—one an alienist of extensive experience, who has since died—testified that he was unquestionably insane. The fact that the accused had been a patient in an insane asylum confirmed all of the physicians in their respective opinions, the former believing that this experience had given him the opportunity of learning how to present a very good imitation of insanity, the latter believing that it furnished positive evidence of the existence of an insane diathesis. The jury, in spite of the preponderance of evidence in favor of his insanity, found him guilty—as indicted—of murder in the second degree, and he was sentenced for life to State prison, from which—as the rumor goes—he was sent to the Mecca of neurotic criminals—Middletown.

I was once asked, by the attorney for the State, to examine a prisoner who had shot and killed a man without any immediate provocation, and whose attorney—subsequently the attorney for the man who killed two women—had suggested that the man might be insane. I could not satisfy myself that this was the case, and so reported. Thereupon the prisoner's attorney persuaded the attorney for the State to consent to the acceptance

by the judge of a plea of guilty of murder in the second degree, and this man was sent to State prison.

These cases indicate some of the different ways in which criminals, whose mental condition shows more or less signs of impairment, are disposed of by the courts. It is difficult to avoid the conclusion that both judge and jury are influenced to a very moderate degree by the testimony of medical experts, if there is much difference in the opinions which they express.

It has happened that an expert has been brought from outside the State to testify in regard to the mental condition of a prisoner on trial in the criminal court. This seems to be an uncalled for reflection upon the medical profession of Connecticut, and an unnecessary expense to be borne by her already overburdened taxpayers.

In many cases a brief interview gives one all the evidence necessary to enable him to arrive at the conclusion that the subject of inquiry is insane. But in doubtful cases one must avoid forming an opinion until all available evidence has been thoroughly considered. Repeated interviews should be had, and inquiry should be made from persons who have had the opportunity of examining him under other circumstances and at other times, so as to obtain a comprehensive idea of the character of his acts and conversation. Unless this rule is followed there is liability to error, as is illustrated in the case of a man who, on being examined some time after his arrest, showed no signs of delusions. At his trial, however, the testimony of witnesses showed that while he was committing the acts for which he was arrested, and at the time of his arrest, he showed unmistakable evidence of the existence of delusions.

In giving expert testimony in court a physician should carefully avoid going outside of his own field, and attempting to discuss purely legal questions. He should, as a rule, confine himself strictly to an expression of

opinion as to whether the individual whose mental condition is under consideration is sane or insane, and as to whether it is necessary or desirable that he should be confined in an asylum.

Mental diseases are so common that every physician is likely to be called to attend insane persons, and also to be called upon to testify in court in regard to those believed to be insane. Consequently it is the duty of every practitioner to be familiar with the different forms of insanity, and their diagnosis and treatment. In order that this may be accomplished the medical colleges should give more time to this subject. It should be taught by systematic recitations from a text-book, supplemented by clinical lectures, and a thorough examination at the end of the course. A half dozen or a dozen lectures, with one or two visits to an asylum, and one or two questions on an examination paper on the theory and practice of medicine, do not give a student an adequate preparation for the work in this department, which he is likely to encounter early in his professional career.

The following conclusions are based upon the personal observation of the writer:

I. The appointment by judges, of experts in insanity, does not ensure the selection of the most competent men.

II. The employment of experts by the opposed parties results in the expression of the most diverse opinions.

III. When the opinions of medical experts differ very materially, neither judge nor jury seems to be influenced very much by them in deciding upon a verdict.

OBITUARIES.

Our lives are like the volumes on our shelves,
Their style and binding show our outer selves,
The gilt or plainer dress our rank or birth;
Still but the printed page can give them worth.

—W. G. Brownson, M.D.



William Thompson Lusk, M. D.

WILLIAM THOMPSON LUSK, M.D., LL. D., NEW YORK.

A. Alexander Smith, M.D.,

NEW YORK.

Dr. William Thompson Lusk was born May 23d, 1838, at Norwich, Conn. He spent his boyhood days at Norwich, attending the Rev. Albert Spooner's School with a view to preparation for Yale College. His uncle examined him in Latin, and told him that although well taught it was by the old method, and that if he tried to enter Yale College on that preparation he would be rejected. Accordingly leaving Norwich in the Winter of 1853-54, he attended Anthon's Grammar School in Murray Street, New York City, residing in the family of Dr. and Mrs. Fordyce Barker, to the latter of whom he was related by marriage.

The Winter of 1854-55 he was sent by his mother to Russell's Military School in New Haven, because of "the great advantage he will derive from thorough physical training in the gymnasium."

In 1855 he entered the Freshman Class at Yale College, but remained only one year, leaving college because of the difficulty with his eyes. Later, in 1872, he was enrolled with his class by the action of the Corporation, and then received an honorary degree of A.M. Later still, in 1894, Yale conferred on him the honorary degree of L.L. D.

For one year after leaving college he engaged in business, but his eyes continuing to trouble him, and having no liking for business, in 1858 he went abroad to consult a distinguish oculist, Dr. Mannoir, at Geneva. He had

become much interested, even in boyhood, in the study of chemistry and physiology, and after a short stay in Geneva, he went to Heidelberg and began the study of medicine, his interest in chemistry and physiology leading to such decision.

He remained in Heidelberg two years, and one year in Berlin, coming home to America in 1861 to enter the army. Governor Buckingham of Connecticut offered him a position on his staff, but the young man wishing assured active and immediate service, enlisted as a private in the 79th Highlanders, New York Volunteers. His wish was soon gratified, for joining the regiment in June, 1861, he took part in the battle of the first Bull Run, though not yet mustered into service. At this battle he carried his wounded captain off the field, going backwards that he might not be shot in the back if a bullet should strike him.

He was commissioned Second Lieutenant in the 79th Regiment, September 19th, 1861, with rank from August 3d. He was commissioned Captain February 24th, 1862, with rank from January 19th. He resigned February 28th, 1863, at the request of Governor Morgan, to take command of a regiment then recruiting in New York City. Before the regiment was filled he joined the staff of Gen. Daniel Tyler, and was commissioned Assistant Adjutant General with rank of Captain, July 26th.

While in the service of the United States, he took part in the battles of Blackburn, first Bull Run, Chantilly, South Mountain, Antietam, Fredericksburg, Manassas, and many minor engagements.

Of the battle of Manassas he writes: "I made the charge armed with a ram-rod, which I had picked up on the way thither. I acknowledge that I found the work hotter than I anticipated."

General Isaac I. Stevens in his official report of the battle of James Island, South Carolina, in June, 1862, writes:

"My Assistant Adjutant General was in all parts of the field carrying my orders and bringing me information, to the great exposure of his life, as was my aid, Captain Wm .T. Lusk."

And at the battle of Antietam, in September, 1862, as Acting Assistant Adjutant General of Col. Christ's Brigade, his name is recorded as among those mentioned for "gallant and meritorious conduct in the field, and for efficiency in their departments."

He served as staff officer on General Isaac I. Stevens' staff for a considerable period of time preceding the latter's death in the Summer of 1862.

During the draft riots in New York City in 1863 Capt. Lusk commanded two companies of troops, and was stationed at Eighth Avenue and Twenty-third Street.

During his service in the army he had two horses shot under him, once had his left belt shot off, and saw his 79th Highlander Regiment of one thousand men reduced to two hundred and thirty in number, yet himself never received a scratch.

He resigned September 17th, 1863, when his troops were sent into Delaware and put on the inactive list. After his resignation he came to New York and completed his Medical course at the Bellevue Hospital Medical College, graduating in 1864 and was valedictorian of his class.

He went abroad in May, 1864, for further study, spending four months in Edinburgh with Sir James Simpson; six months in Paris; four months in Vienna with Carl Braun, and two months in Prague with Seifert.

On his return from Europe in 1865, he went to reside in Bridgeport, Conn., where he became associated with Doctor Robert Hubbard from whom he claimed to have learned much of the art of how to practice medicine.

In 1866 he went to New York and became associated with Dr. Fordyce Barker which association continued until 1873.

In 1869 he was made "Professor of Physiology and Microscopic Anatomy" in the Long Island College Hospital. This position he held until 1871.

In the Winter of 1870-71, at the request of Dr. Oliver Wendell Holmes, he delivered a course of lectures on Physiology at the Harvard Medical School. This course was very successful and he was led to expect an immediate appointment to the chair. There was, however, a little delay, during which time he was offered the chair of Obstetrics and Diseases of Women and Children at the Bellevue Medical College, made vacant by the death of Dr. Geo. T. Elliot. This latter he accepted at once, and a few hours later came the offer from Harvard which, of course, was declined. Through this incident New York became his permanent residence instead of Boston.

He held the chair at Bellevue Hospital Medical College up to the time of his death, June 12th, 1897.

In 1870 he was appointed visiting physician to the Nursery and Childs' Hospital.

In 1871 he was appointed Obstetric Surgeon to Bellevue Hospital.

From 1871 to 1873 he was co-editor with Dr. James B. Hunter of the New York Medical Journal.

From 1889 to1897 he was President of the Faculty of the Bellevue Hospital Medical College.

Other positions and titles he held or had held were: Consulting physician to the Maternity Hospital and to the Foundling Asylum; Consulting Obstetrician to the Society of the Lying-in-hospital of the City of New York; Visiting Obstetrician to the Emergency Hospital; Gynecological Surgeon to St. Vincent's Hospital; President of the American Gynecological Society; Vice-President of the New York Obstetrical Society; President of the New York State Medical Society; Honorary President of the Obstetrical Section at the Berlin Medical Congress; Honorary Fellow of the Edinburgh and London Obstetri-

cal Societies; Corresponding Fellow of the Obstetrical Societies of Paris and Leipsic, Corresponding Fellow of the Paris Academy of Medicine.

He was also a member of the Military order of the Loyal Legion of the United States with title of Captain, and Assistant Adjutant General, U. S. Volunteers.

Dr. Lusk was the author of many papers on various medical subjects, chiefly on Obstetrics and Gynecology. He evinced his interest and training in physiology by occasional contributions on that subject. A paper on the "Histological Doctrines of Robin," a paper on "Uremia, a Common Cause of Death in Uterine Cancer," and still another on "Origin of Diabetes with Some Experiments Regarding the Glycogenic Function of the Liver," all attest this, and were published in the New York Medical Journal during the time he was one of the editors.

A paper entitled "Nature, Causes and Prevention of Puerperal Fever," read before the International Medical Congress in 1876, in Philadelphia, was one of the first in support of the germ theory of disease, which then created considerable interest. When Koch's paper appeared in 1882 on the isolation of the tubercle bacillus, Dr. Lusk accepted his conclusions enthusiastically, regarding such conclusions as offering the only satisfactory scientific explanation of the origin and spread not only of tuberculosis, but also of many other diseases.

The first edition of his monumental work, "The Science and Art of Midwifery," appeared in 1882, and has gone through four editions. The last edition, published in 1892, Dr. Lusk regarded as practically a new book, it having been largely re-written. In 1895 he appended a chapter on Symphysiotomy. It was his intention during the Summer of 1897 to revise the book again and issue a fifth edition.

The work has been translated into French, Italian, Spanish and Arabic.

When the book was about to be issued, the plan of it was submitted to an eminent obstetrician of New York, whose opinion was highly valued by both author and publisher, and whose criticism was that it would certainly fail of success unless the plan were changed. Dr. Lusk refused to change the plan and said:

"It must go before the profession on its merits without such change."

A few months after it was published the writer of this address asked him as to the sale of it. His response was quite characteristic of his well-known modesty: "As well, quite as well as it deserves; there are still four hundred copies unsold. I am desirous of issuing the second and as I think a much improved edition." Within a few days on meeting him again he said: "The second edition must come out at once; the publishers have just received an order from London for nine hundred copies."

This work added greatly to his reputation both at home and abroad. While its trend is decidedly German, the clinical aspect of it is the result of New York practice.

Dr. Lusk married May 4th, 1864, Miss Mary Hartwell Chittenden, daughter of Mr. S. B. Chittenden, of Brooklyn. She died in 1871. Of this marriage there were born five children, one of whom died in infancy. Two daughters and two sons survive. One son, Graham, is Professor of Physiology in the Medical Department of Yale University, and the other, William C., is a practicing physician in this city.

He married again in 1876, Mrs. Matilda Thorn (née Myer), who died in 1892. Of this marriage a daughter survives.

Dr. Lusk's eminence as an author, a teacher, and a practitioner, made his name well known. His charming personality and his genial, hearty manner brought him many friends. Modest as to his own attainments, he was ever ready and cordial in his praise of the work of others.

He was a loyal friend and a generous antagonist. He was sometimes impulsive but always just and magnanimous. He was sincere, and unselfishly devoted to duty, qualities which always command respect and admiration. No efforts were too great for him when suffering called for his services; indeed he often worked for others to the detriment of his own health. He was ever ready to take responsibility when necessary, but he was always conservative in his judgment. With his colleagues in college work, he was always the affectionate and warm-hearted co-laborer, and intensely interested in it.

He was the counsellor and friend to young men. Well might be applied to him the sentiment he expressed in the dedication of the first edition of his book, to Dr. Fordyce Barker, "Generosity toward the younger members of the profession."

ROSWELL FOX, M.D., WETHERSFIELD.

EDWARD G. FOX, M. D.,

WETHERSFIELD.

On October 25th, 1898, after a varied illness, died at his residence in Wethersfield, Connecticut, Dr. Roswell Fox.

Roswell Fox was born in Lebanon, Connecticut, November 14th, 1825, and prepared for Yale College at Wilbraham, Mass., and Bacon Academy, Colchester, and thereafter commenced the study of medicine with Dr. Elisha Phinney of Yantic and graduated from the medical department of New York University, New York City, Class of 1847, being a student of the late Professor Valentine Mott, a well-known instructor of that institution. He then located in Wethersfield where he continued in active practice until his death—over fifty-one years. In May, 1848, he married Miss Anna Maria Gager of Bozrah, Connecticut, daughter of Hon. Samuel A. Gager of that town. Dr. Fox and wife celebrated their golden wedding in Wethersfield last May. The day was passed quietly with his immediate family on account of his feeble health.

Dr. Fox during his membership with the Association has represented the Hartford County Medical Association as Fellow to our State Medical Society.

Two sons are living, Charles Fox, M.D., of Willimantic, Conn., who was Surgeon-General Connecticut National Guard from January 1st, 1886, for two years, and Dr. Edward G. Fox of Wethersfield. The subject of this sketch was at the time of his death one of the oldest medical practitioners in the State. No physician could have more fully the confidence of the community than he did.

as was fully and amply proved by his long and unusually successful career, no man could be more devoted to his profession. With rare singleness of purpose, foregoing the allurements of ease and pleasure he surrendered himself to the welfare of his patients, faithfully and anxiously watching over them, joined with that benevolence so expressive in his countenance. He was without guile and abhorred ostentation. Honesty of purpose and entire freedom from selfish ends inspired confidence in all who sought his counsel and that confidence then grew into close personal friendship. Whatever is exemplary in dealing justly with his fellowmen, in speaking evil of no man, in bountiful befriending the poor, in sacrificing self for the good of others, in leading a blameless life, these virtues were features in his upright and Christian life. He was also deeply interested in the welfare and prosperity of the Town and State in which he lived. He has been a member of the Wethersfield Congregational Church for nearly half a century.

> "But there are deeds which shall not pass away
> And names that must not wither, though the earth
> Forgets her empires with a just decay." —Byron.

FARNHAM O. BENNETT, M.D., WILLIMANTIC.

T. Morton Hills, M.D.,

WILLIMANTIC.

Dr. Farnham O. Bennett was the son of a Baptist clergyman, Rev. David Bennett. His mother's maiden name was Clarissa Farnham. He was born in Ashford, December twenty-third, 1832, but most of his youth was spent at Burlington, Conn.

He graduated from the Suffield Academy and then entered on the study of medicine with a prominent surgeon in New York city, whose name is unknown to the writer.

He took the degree of Doctoratum in Medicina from The Berkshire Medical School in 1859. He taught in the Old Canton Academy the Winter after his graduation, and the following Spring he commenced the practice of medicine in the then thriving village of Westford in the town of Ashford, Conn., his father having established himself there prior to Dr. Bennett's graduation.

He was welcomed to Ashford by the late Dr. F. L. Dickerson, then practicing in Willington, and Dr. Wilton S. Bradford of Woodstock; both turning over to him much of the too remote business that they were doing in Ashford.

He soon had a business that taxed his energies and carried him into surrounding towns. In the Spring of 1868 he married Miss Romelia Parsons of Rutland, Vt. In 1863 and 1878 he was a Representative from Ashford in the Legislature.

Tiring of the long drives necessary to reach his patients in that region he moved in April, 1879, to South Coventry, and again in June or July, 1881, to Willimantic.

In 1886 he went to Fort Collins, Col., on account of his wife's health, remaining there until 1891, when he returned to Willimantic, where he practiced his profession as he had strength. While living in Willimantic, many of his nights were spent in visits to old friends in Ashford, who would not be denied his services.

For the last two years of his life he was in so feeble health that he closed his office for weeks and visited his children. His oldest son, William H. Bennett, resides in Danielson, Conn.; Frederick W. Bennett lives in Providence, R. I.; a daughter, Anne Louise Bennett, is with her mother at Fort Collins, Col.

He was confined to the house but five or six weeks and to his bed but two days.

He died on Sunday, March 26th, 1899, at the home of his son, William H. Bennett, Danielson, Conn. The burial was in the family grounds at West Ashford, Conn.

Dr. Bennett was a skillful, conscientious and faithful physician. He was eminently kind to the poor—attending them gratuitously or letting them make him whatever return they saw fit.

Many will miss his kindly visits.

FREDERICK LEVI DIBBLE, M.D., NEW HAVEN.

JOHN E. STETSON, M.D.,

NEW HAVEN.

Probably no physician in general practice ever enjoyed more confidence and greater affection of his patients and certainly none deserved more, than did Dr. Dibble. Of a kind, sympathetic nature, he was a friend to every patient, and no attention, or no personal sacrifice on his part was too great if made in their interest; and his life, while engaged in practice, was one of continual sacrifice. His constitution was not of the strongest and required of him a constant watchfulness, strictest temperance in all things and surrender of many personal pleasures, that he might be able to continue to do the enormous amount of work which he did for many years. While this is true of all physicians in general practice, it was eminently so in his case; besides his personal attributes of nature that compelled the deepest regard from all his patients. So too, his mild and generous manner was shown to his brother workers when seen in consultation, and many a heart of the younger members beats more quickly and warmly as they recall the kindness and consideration shown them when in the hour of their trial and anxiety he was called to lend the helping hand.

Beyond the deepest interest and devotion to his professional work, there were two ambitions prominent in his life: A love for the higher literary pursuits and a desire to travel. At the time of his death he was master of five languages, English, German, French, Spanish and Italian, all of which he had mastered alone and in the most thorough manner, reading, writing and speaking all

of them. He had visited Europe five times, and in 1895 in company with his wife, spent one year in a tour around the world.

Dr. Dibble was born in Newtown in 1830, his parents moving to New Haven when he was about two years of age. He attended public schools here till he reached his eighteenth year of age, when he joined a party and went to California in 1849, in its earliest gold excitement. He remained there some seven years, visiting during that time Australia, the Society Islands and South America, continuing his studies. He acquired Spanish and French while there. He returned to New Haven in 1855, and immediately placed himself under the instruction of the eminent Dr. N. B. Ives, and soon after entered the Yale Medical College. After graduating he spent the next year and a half in the General Hospital there and then began general practice in New Haven. He was married in April, 1861, and upon the declaration of war, within two weeks of his marriage, was the first to offer his services to his country. Gov. Buckingham appointed him Assistant Surgeon of the First Connecticut Volunteers, Dr. Stearns of Hartford being Senior Physician. This regiment was in the famous battle of Bull Run. Being three months' men, they soon returned, when he was appointed as Surgeon of the Sixth Connecticut Volunteers, and served three years in that position. On his return and discharge, he was appointed Assistant Surgeon at the Hospital in New Haven, then a Government Hospital, and later as Consulting Surgeon at the Hospital in Hartford. These positions he held until the war was over, and Hospitals and Surgeons were no longer needed, but from that time he has been continually connected with the General Hospital in New Haven in some capacity, either as Visiting Physician, Secretary, Director, or Consulting Physician, a continued period of more than thirty years. Dr. Dibble again opened an office in New Haven

in 1865, where he practiced continually till 1886. He then retired from active work, and spent the remainder of his life in travel and literary pursuits.

Dr. Dibble died in Macon, Georgia, May 12th, 1898, of cancer of the stomach. He left no children. His wife survives him and cherishes, with all others who knew him, his loving memory.

OLIVER FERDINAND TREADWELL, A.B., M.D., NEW HAVEN.

HENRY H. SMITH, M.D.,

WHITNEYVILLE.

Dr. Treadwell was born of a long line of honorable ancestry in Baltimore, Md., June 25, 1841.

Fitted for college in his native city he graduated from Yale College in the Class of 1862 and from the Yale Medical School in 1865.

He at once located in New Haven where he practiced for about three years when he removed to a farm in Hamden, where, while practicing to a certain extent, he gradually devoted most of his time to the more congenial occupation of market gardening. He became a member of the New Haven County Medical Association in 1867 and regularly attended its meetings, retaining his deep interest in, and connection with the profession to the last.

He was a man of genial temper, a pleasant companion and true friend—conscientious, scrupulously honest, generous and just.

His kindness of heart, integrity and unvarying consideration for others caused him to be held in high esteem by all who knew him. He was a good example of a Christian gentleman—and in his daily life exemplified the teachings of the Master he served.

For many years he was an active and faithful member of the little white church on the banks of Lake Whitney.

On July 10, 1872, he married Sarah Jane Barraclough of Glenham, New York, but no children resulted from their union.

For several years he had been in failing health, though still able to attend to his business until on July 9th he

was stricken with paralysis from which he died August 22, 1898. He was buried from the church he loved so well with full Masonic rites.

With him duty was pleasure and we may truly say of him, judged by his life, faithful unto death.

WINTHROP BAILEY HALLOCK, M.D., CROMWELL.

Francis D. Edgerton, M.D.,

MIDDLETOWN.

Winthrop Bailey Hallock, M.D., died of apoplexy at the Manhattan Hotel, New York, September 24, 1898. He was born in Utica, New York, February 2d, 1838, the son of Samuel Titus and Sarah Bailey Hallock, being a descendant through his father of Peter Hallock who landed at Hallock's Neck, Long Island, in 1640, and through his mother from the Stanwoods of Maine. He was educated at Jamestown, N. Y., studied medicine at the University of New York and the Long Island Hospital Medical College, graduating from the latter in 1864. He married, January 20, 1858, Mary Kirkwood, daughter of Col. William Kent of Concord, N. H., and widow of Dr. Joel Shew, brother of Dr. Abram Marvin Shew, the first Superintendent of the Connecticut Hospital for Insane. From 1862 till 1865 he served as Medical Cadet and Assistant Surgeon in the United States Army, having been stationed at hospitals located at Central Park and David's Island, N. Y., and Fortress Monroe, Va. During this period he was intimately associated with the late Dr. Edward C. Seguin, the eminent nerve specialist; Dr. Thomas R Pooley, the distinguished oculist of New York City, and Dr. John Van Duyn, a prominent surgeon of Syracuse. The close friendship thus formed between these clever men continued unbroken and undiminished until terminated by death. Dr. Seguin, his most intimate friend, was the first to go, and his death was a great personal blow to Dr. Hallock.

After the war he returned to Jamestown, N. Y., for a time and later went to New York City where he began practice with his uncle, Dr. Robert T. Hallock. At the

opening of the Connecticut Hospital for Insane he accepted the position of First Assistant Physician to the Institution, which he retained until 1877 when he established "Cromwell Hall," a sanitorium for nervous diseases, situated on Prospect Hill, Cromwell, Conn., a picturesque and beautiful location in the Connecticut Valley.

He was a member of the American Medicopsychological Society, The New England Psychological Society, and the Connecticut Medical Society. He was the author of several pamphlets upon insanity and the care of the insane, the one best known to the Society being a paper upon "The Cottage System for the Insane," published in the New York Medical Journal, Vols. XVIII and XIX, the Annual Report of the Kansas State Board of Commissioners for 1874, and the Transactions of the Connecticut Medical Society for 1877.

Dr. Hallock's wife survives him as do his two children, Dr. Frank Kirkwood Hallock, born August 18th, 1860, and Susan Clark Hallock, born April 21st, 1869. The son married May 7th, 1890, Miss Kate Camp Avery, daughter of the late Abraham Avery, of the firm of Rand & Avery of Boston, and the daughter married September 6th, 1897, William Powell Couch of Dubuque, Iowa. Dr. Frank K. Hallock, so long associated with his father, continues as Medical Director of the Institution founded by his father, admitting now, however, no insane patients, but only nervous invalids, while his brother-in-law assumed the business management after the father's death. Mrs. Hallock, the widow, by whom it was made one large, bright, happy family, almost unique in its kind, still remains to assist in the work which by her capacity and cheering personality had a success not wholly to be measured by the skill and kindly tact of the late beloved Superintendent. Too much praise cannot be given to this creation of Dr. Hallock. He was eminently fitted by nature and education for his work. True to his Quaker

ancestry he was a man of few words and retiring disposition, firm, most patient, and much beloved by those who knew him most intimately.

While an ardent Republican he always declined political offices. He was deeply interested in the welfare of the town of Cromwell, was one of the moving spirits in the organization of The Village Improvement Society which has already done much to beautify the village, and when the first Good Road Association in the State was formed in Cromwell, he was chosen President and still held the office at his death. He had the Anglo-Saxon fondness for sport and games, having played golf with his patients two days before his death.

He devoted his entire energies to his patients though in later years largely assisted by his son. His heart and soul were in the success of his institution. His habits were simple and regular. His earnest, kindly spirit and quiet strength were imparted to all those about him. His calmative power and ability to influence mental cases were marked. As a medicolegal expert he was brought before the public in many important cases where his special knowledge was highly valued. As a citizen he had public interests at heart and considered it a pleasure to give time and strength for the good of society; as a physician, we accorded him a high place and regarded him as an unquestionable authority; as a friend we never doubted his loyalty or sincerity.

WILLIAM GREENE BROWNSON, M.A., M.D., NOROTON.

A. E. Barber, M.D.,

BETHEL.

William Greene, son of Simeon and Lucretia Brownson, who died January 3d, 1899, was born in Peterboro, Madison County, New York, August 6th, 1830. He was graduated from the State Normal School at Albany, and from the Medical School of New York University. He received the honorary degree of Master of Arts from Hamilton College in 1864.

He spent the earlier years of his manhood in teaching at Ogdensburgh, Nyack and Jamaica, N. Y. Towards the close of the Civil War, after finishing his medical course he entered the United States service as surgeon, being stationed at the David's Island Hospital. In 1865 he began the practice of medicine in New Canaan, where he continued to live and to practice until the Autumn of 1891. Since that he has been connected with the Fitch's Soldiers' Home as Resident Physician. He had been President of the Connecticut Medical Society, and was a member of the American Medical Association.

During his residence in New Canaan he was a prominent and active worker in the Congregational Church, of which he was a member. For years he was Acting School Visitor, Medical Examiner, and Health Officer of the town. He was the first Warden of the Borough, and held the office two years.

He was married September 5th, 1854, to Caroline L., daughter of Samuel S. and Polly Barstow, who survives him. They had six children, four of whom are now living; William Clarence, a physician in Asheville, N. C.; Frances M., wife of Stephen G. Beers of Taunton, Mass.;

Carleton L., professor in the College of the City of New York, and Wendell G., attorney in Springfield, Mass.

As has been said, Dr. Brownson was one year President of the Connecticut Medical Society, but it was at the annual and semi-annual meetings of the Fairfield County Association that he was most seen and heard, and always with acceptance and profit. It was at our semi-annual gathering in October, 1898, that I last met him. I shall never forget the pleasant and profitable conversation we had while walking together, from our place of meeting in Stamford to the depot. He spoke quite feelingly of our high calling, and the professional courtesy that ought to be observed in our intercourse with our medical brethren, but that it was quite neglected in these latter days.

As far as I know he was the oldest member of our County Association.

I was told, but a few days since, by one who knew him intimately while in New Canaan, that if any trouble or difficulty arose in his neighborhood, Dr. Brownson was the first to seek for and aid in restoring peace, which brought to my mind these words: "Blessed are the Peacemakers." We feel deeply and mourn the loss of our dear friend and brother. I am sure I voice the sentiment of each member of our County and State Society when I say: "His works do follow him." In conclusion I will quote a small portion of a poem that has just come to hand:

"GETTING GRAY."

BY WM. G. BROWNSON, M.D.

"You are getting gray," said a friend one day,
As I traveled along the road;
"Yes, a little," said I, in a calm reply,
For the truth of his statement I showed.

"You are getting gray," said my child at play,
As he glanced with his bright blue eye
Through the back of my chair, at the fading hair;
"But a little, if any," said I.

Oh, if getting gray is the chosen way,
From the bud to the opening flower,
If the lines of white throw a clearer light,
On the mists of the final hour;

I'll welcome the gray, let there come what may
To the trunk or the withered leaf:
If the fruit be sound, ere it falls to the ground;
If the kernels be ripe in the sheaf.

MYRON NEWTON CHAMBERLAIN, M.D., CHESHIRE.

E. T. Cornwall, M.D.,

CHESHIRE.

The sndden death of Dr. Myron Newton Chamberlain of Cheshire, on January 10th, 1899, from apoplexy, came as a shock to every one in our town, and was recognized as a public loss. The day was bitter cold, the thermometer registering six to ten degrees below zero, but the Doctor, with thoughts only of others, had faced the cold, cntting air to visit an aged patient who was not expected to live. On his way he met Rev. J. P. Hoyt, his pastor, and asked him to ride. They had not gone over a mile when the Doctor said: "I feel so strange," let the lines fall from his hands, and died before anyone could do anything for him.

Dr. Chamberlain was born in New Haven in 1836. He was the son of Abel C. Chamberlain who began a fnrnitnre-store business in 1835. Deceased was one of five children, the others being George R. Chamberlain who continues the furnitnre business; James H., who died about three years ago; Miss Hannah M. Chamberlain of New Haven, and Mrs. James L. Johnson of Springfield, Mass.

Dr. Chamberlain's early life was spent in New Haven. He attended the private schools of Mr. Joseph Farren and Joshua Pearl, fitted for college at Hopkins Grammar School and entered Yale in 1853, from which he graduated in 1857. For the next five years he taught school in Sandlake and Binghamton, New York, and Morristown, N. J. In September, 1862, he enlisted in Co. H, of the 27th Regiment, C. V., and October 3d was mustered into the United States service. He was in the battle of Fredericksburg on December 13th and Chancellorsville when he was taken prisoner and marched to Richmond.

He was soon paroled and brought North to Annapolis, where he was engaged in hospital service for a time, and later in the same service at Camp Parole until his regiment was mustered out July 22d, 1863. His health was impaired for life by his service in the army, and though he could have had a pension for the asking, yet he never applied for one.

While in the army he formed the idea of becoming a physician, and on his return from the war he began the study of medicine at the Yale Medical School. After graduating he came at once to Cheshire, and continued to practice his profession until the day of his death. He was married twice; his first wife was Miss Julia Denison, daughter of Dr. Denison of Fairfield, Conn. She died in 1873, leaving one child, Miss Euretta D., who is now living in New Haven. The second marriage was with Miss Carrie A. Beers, daughter of the late Philo S. Beers of Cheshire, who now survives him.

Dr. Chamberlain was a great reader and thoroughly informed on all the questions of the day. He was of a scholastic turn of mind and greatly interested in ancient English history, and could have filled a professor's chair in college, so far as that branch was concerned.

The Doctor had spent thirty-three years in the practice of his profession in Cheshire where he had a large practice, and a long list of friends who will miss him sorely. Painstaking and careful in all his doings, thoroughly reliable, and his judgment seldom at fault, whether in matters pertaining to medicine, morals or finance, he was looked upon as almost, if not quite, a final authority.

In politics he was a Republican, and refused the many offers to any office within the gift of his party. He was strong in the temperance cause, and has done much for the town in this line by being temperate in his views.

He has been Health Officer since 1889, and not once did he fail to report to the State Board the condition of

Cheshire each month. By his watchfulness and care I know he prevented what might have been a serious epidemic of scarlet fever.

Towards his brother physicians he gave good words of cheer and encouragement and always a quick response to calls for aid. None will miss him more than the writer who has needed his aid and advice many times.

In all public matters he was greatly interested. He was Chairman of the Board of Education at the time of his death, and no one will be missed more. One would be pleased and surprised to see him read Latin or Greek as quickly as the day he left college. He devoted much time to the High School and the Cheshire Public Library, and to him more than any one can we give credit for their success.

The Doctor was a charter member of Edgar A. Doolittle Post, G. A. R., and on the night of its organization in 1881, he was mustered in as Surgeon, which position he filled till his death.

It was a settled principle of his to make himself of use and help to the community and those he associated with. He abhorred the man who had no use for society except to get what he could out of it.

He was a member of the State Medical Society and New Haven County Association, and was President of the latter in 1883.

Doctor Chamberlain with all his work found time to write down a record of the weather changes each day for the last fifteen years; also to take care of the town clock in the church tower. The only remuneration he had or desired was the pleasure of hearing it strike, and on time to the second.

He was a modest and unassuming man, and never sought preferment. From his early life up his Christian character shone with a consistent and bright light, and his many deeds of kindness and help, prompted by the spirit of the Master, are the best monuments he could have in the hearts of the people among whom he moved.

HENRY DOUTTEIL, M.D., NEW BRITAIN.

GEORGE CLEARY, M.D.,

NEW BRITAIN.

Dr. Henry Doutteil was born at Heina, Hesse Kassel, September third, 1848. His father and grandfather were physicians before him, his father being physician to a large institution for the care of the Insane and the Imbecile at Heina. The son attended the schools of his native place and gradnated at the high school in 1867. The same year he emigrated to the United States and took up his residence in New Haven with the determination to enter Yale College as soon as he could obtain the means.

He obtained employment in Sargent's factory at first in some mechanical employment, but his employer, recognizing his ability, soon advanced him to a more remunerative position. He found occupation as bookkeeper with different firms, in making translations from the German, and for some time edited a German Republican newspaper, working day-time and evenings till in 1871 he entered Yale Medical School, being then twenty-two years of age. He continued during his three years' course his outside work, and succeeded in earning his way through the institution. He graduated with honor and was selected for a place on the staff of House Physicians of the New Haven Hospital. After a year at the hospital, he removed to Meriden and opened an office. In three years' time he had built up a large and remunerative practice, when ill health overtook him. Twice he relinquished his practice for several weeks at a time in an effort to regain his health. When attacked the third time, he made over his practice to Dr. Hughes and went

South. A laryngeal trouble was a prominent factor in his illness. On his return from the South in 1886, he opened an office in New Britain, but here also illness periodically asserted itself, obliged him to refuse night calls and was continually an obstacle in his path.

Three years ago he was elected chairman of the Board of Health of New Britain City. In the performance of the duties of that office he was thorough, efficient and conscientious. The health conditions of the city gradually improved under his administration.

At the last annual meeting of the New Britain Medical Society he was chosen President. In that office, as elsewhere and always, his effort and influence were put forth to advance the harmony, the power and the usefulness of the profession in the city. He was not censorious, but when occasion called for it he was direct, frank and outspoken. He always stood for the highest standard in professional relations. He read much and had a well-furnished mind, wrote and spoke fluently the German, French and English languages.

History was his favorite study, outside of his professional reading. His memory was good, and being of a social nature, in conversation he was ready, instructive and entertaining.

He was courteous and polite in manner and was possessed of that dignity of bearing which is born of high thoughts and purposes. All who knew him respected him. Those who were intimate with him loved him. His nature was a sensitive and sympathetic one. He was not partial to surgery. His patients were much upon his mind. His presence in the sick-room was itself a benediction and a medicine.

Just how much and what Dr. Doutteil would have accomplished if he had possessed good health, it is impossible to say. Perhaps those business qualities and ambitions that compel financial success were not prominent in

his make up; he was too altruistic to be a good collector. He might have said with Boerhaave, "The poor are my best customers for God is their paymaster." From the well-to-do he exacted good fees, but the poor had no difficulty in getting off lightly. His wants were few and simple, and when they were supplied he cared not for more. He was never married. Besides a few intimate friends, his books, of which he had many, were his companions. He was a member of the German Lutheran Church and contributed to its support. Individually he was liberal in his views, and perhaps his life and conduct are the best exponents of his ideals and opinions. Whatever he undertook he did well—"non tetigit quod non ornavit."

His last sickness was the result of exposure to the inclement weather and from influenza it developed into pneumonia, of which he died May third, 1898.

LEONARD J. SANFORD, A.M., M.D., NEW HAVEN.

Leonard Jacob Sanford was born, lived and died in the City of New Haven. It is often said, it is as old as Holy Writ, that a prophet is not without honor save in his own country and among his own kindred. Yet here is a life of usefulness, of honor and of renown rounded to the full, begun, continued and ended within the bounds of one city.

He was born November eighth, 1833. His early schooling was in the same city where at the Yale Medical College he began his professional studies. Those were completed at the Jefferson, then the leading Medical College of the country, in 1854. Only four years later, in 1858, Yale conferred upon him the degree of Master of Arts and five years later still elected him Professor of Anatomy and Physiology. His predecessors in this chair were Doctor Jonathan Knight, 1813-1838, and Dr. Charles Hooker, 1838-1863. These are men held in high esteem among the profession of our State. In 1879 the chair was divided. James Kingsley Thacher, M.D., became Professor of Physiology, while Dr. Sanford continued as Professor of Anatomy. This is now the Hunt Professorship named in commemoration of an endowment received from the estate of the late Mrs. Ebenezer K. Hunt. Doctors Knight, Hooker and Sanford each held their Professorship for twenty-five years. Dr. S. W. Williston was Dr. Sanford's successor. During the twenty-five years the classes were not large, the average being about ten, but many well-known practitioners of this State doubtless recall with pleasure Dr. Sanford's mild manner, his painstaking efforts, his familiar but dignified bearing, his desire that his pupils should learn the difficult details

of his department. He thought much of his profession and in this the nobler motives were at the foundation. This was apparent in the class-room, in his general practice, in the council chamber, in conversation.

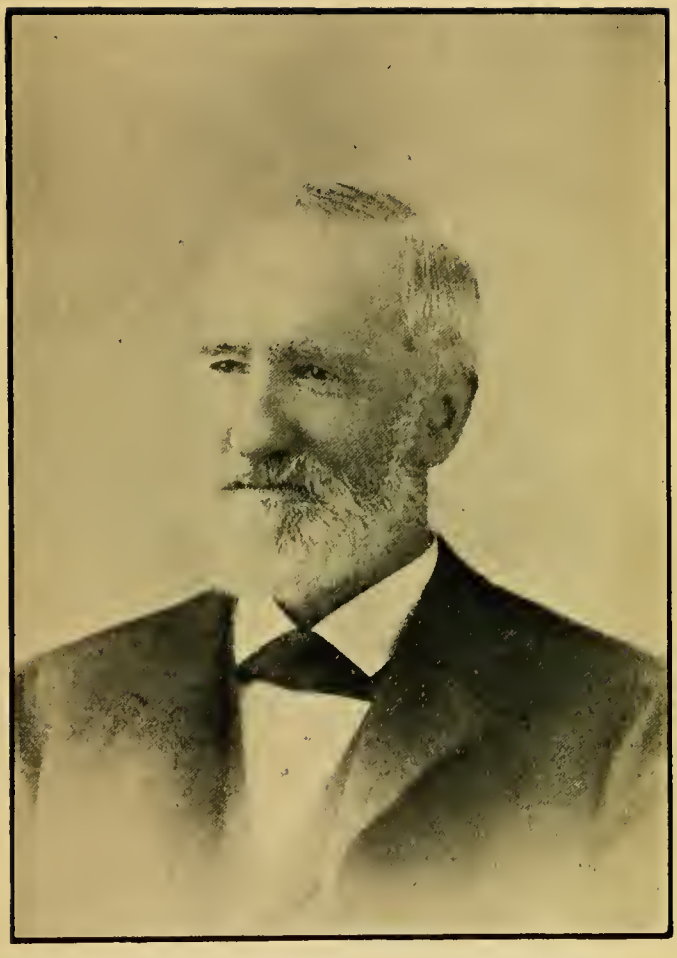
On one occasion while riding with a physician of a neighboring town who had called him in consultation, the talk chanced to turn upon the hard work of the Doctor's life, its strain, its wearying, its wearing.

"Dr. B—," he said, "if you had the choosing over again, would you select the practice of medicine?" "I don't know that I would," was the reply, "I cannot answer without more thought, but I question very much if I would." "Would you?" "Yes, I would," was the very prompt reply. "I don't know of any other profession in which one can do more good than ours."

In 1855 he joined the New Haven County Medical Association. He was elected Secretary of the Connecticut Medical Society in 1862. At the meeting in 1864 he was absent in Europe. Dr. M. C. White was chosen Secretary pro tem. and that was the beginning of Dr. White's long and faithful service as Secretary, continuing for twelve years until 1876.

In 1873 Dr. Sanford was one of the Vice Presidents, and that year read the Annual Dissertation on Medical Education. His only other literary contribution is The Plastic Constituents of the Blood, their Physiological and Pathological Conditions, which he read before the New Haven Association in 1862.

The record of his election as Professor in the Medical College reads strangely to us of the present day. There were present on the part of the Corporation of Yale College, Theodore D. Woolsey, Jeremiah Day and Benjamin Silliman. On the part of the Society, Denison H. Hubbard, R. A. Manwaring, H. M. Knight, Joseph Palmer, Ralph Deming.



President Woolsey was called to the chair, and H. M. Knight appointed Secretary. After due consultation, the Committee proceeded to ballot, and Leonard J. Sanford, M.D., was unanimously nominated to fill the vacancy caused by the death of Prof. Charles Hooker.

In 1866 Dr. Sanford married Miss Annie M., daughter of the late William Cutler of New Haven, whose death preceded his own but a short time. Three children survive. He died December 12, 1896, at his home on Crown Street, after more than a week's illness. He was a member of the American Medical Association and of the American Academy of Medicine. He was Deacon of the Center Church. He took a personal interest in young men, receiving them often at his house. He was hospitable and ever ready to entertain the Medical Society when it met in New Haven. President Dwight shortly after his election to the head of the college was first brought into personal contact with the physicians of the State at one of these receptions given by Dr. Sanford.

He seemed to take delight in making others happy. Once, as consultant, while receiving a fee from the family physician he disturbed accidentally a roll of bills in his pocket. He remarked that was his Christmas money of which he was very careful. Questioned regarding it he explained that every Christmas he was accustomed to remember quite a large number of people and he preferred to give money. This was a regular habit with him. His good deeds live after him and his memory is sweet.

DANIEL C. LEAVENWORTH, M.D., NEW HAVEN.

From the Obituary Record of Graduates of Yale University, 1897.

Daniel Carroll Leavenworth, third son of Russell and Eveline (Stone) Leavenworth, was born in Woodbury, Conn., on April 29, 1828. He removed to New Haven before he was of age and began to learn the trade of a carriage-maker, but soon after entered the drug business in connection with his oldest brother, with whom he remained until 1855 or '6. He then opened a drug-store by himself, on Chapel Street, adjoining the New Haven House, which he carried on until about 1870.

After his graduation at the Medical School in 1865 he entered on general practice in the city, and so continued until induced to retire by failing health.

He died at his home in New Haven on December 19, 1896, from paralysis, in the sixty-ninth year of his age.

He married on May 13, 1869, Julia A., daughter of the Rev. Aaron S. Hill, who survives him. Their only child was graduated from Wesleyan University in 1896 and is a member of last year's graduating class in Yale College.

P. M. HASTINGS, M.D., HARTFORD.

MELANCTHON STORRS, M.D.,

HARTFORD.

Dr. Panet Marshall Hastings was born August 17, 1816, in Clinton, N. Y. It is said that many of his ancestors were prominent in the medical profession. His grandfather, Seth Hastings, practiced in Washington, Litchfield County, Conn. He was a Fellow of the Connecticut Medical Society in 1792 and '3, and attended the first convention held at Middletown in 1792. Seventeen years after he removed to Paris in Oneida County, N. Y., where he practiced many years. He had ten children. His son, Seth Hastings, Jr., began practice in the village of Clinton, about nine miles west of Utica, N. Y. He had fifteen children, two of whom are living.

Dr. Hastings obtained his preparatory and collegiate education in his native town of Clinton, with the exception of one year at Geneseo in attendance upon a Lancasterian School. He entered Hamilton College in Clinton in 1833; left in 1836 to teach a select school for six months, and three months were devoted to a special course in Botany under the direction of Dr. Samuel B. Bradley. He returned to Hamilton in 1837 and graduated in 1838. He immediately began the study of medicine. In the Winter of 1838 attended medical lectures at Fairfield, Herkimer County, N. Y., being the last course given by the College of Physicians and Surgeons in western New York. In 1840 and '41 he attended medical lectures in New Haven, and graduated at the College of Physicians and Surgeons in New York in 1842.

He then formed a copartnership with his father, and they continued together until 1852, when his father was

unfitted for business, having had an attack of paralysis. He practiced two years after this in Clinton. During this time he did some outside work. It is said on good authority that he gave a course of lectures in Chemistry at Hobart College. After this he removed to Hartford in the Spring of 1855, that being Mrs. Hastings' native place.

He became a member of this Society in 1855. In 1856 he formed a limited partnership for four years with Dr. A. W. Barrows which partnership was terminated at the end of that period. We remember him in those early years as a well-informed and wide-awake practitioner. In 1857 he read a paper before the State Society upon the Discoveries and the Practical Value of the Microscope as a Means of Diagnosis. This paper was well received by the Society and referred to a committee of three. It must be remembered that this was long ago, probably before those now using the microscope in Hartford were born. It was very uncommon in those days to see a microscope in the office of a physician. He was probably the first to have one in Hartford. We recall seeing it in his office the year that he read the paper mentioned. Glancing at that paper one sees that he was familiar with the instrument and what he then wrote is not out of date to-day. In the following year he was elected Secretary of the State Society, an office which he held for four years. No man has a greater opportunity for promoting the interests of a medical society than the Secretary. Previous to his election to this office the printed Proceedings of this Society were very meager. He more than doubled the annual Proceedings by the collection of interesting papers and reports. In 1864 he read the Annual Dissertation, subject Scarlatina. It was an able paper upon an old subject. His views and his treatment of that disease were as good as can be found in any treatment of to-day. He says of the etiology of Scarlet Fever

that it is due to some blood-poison which will undoubtedly be discovered. No pathologist has got beyond this point. No germs of disease were talked about in those early days. In 1873 he made, as Chairman of the State Committee, a report upon Vaccination. Since that time Dr. Hastings has written nothing for the Society except in 1883 the Biographical Sketch of Dr. George B. Hawley. He was closely associated with Dr. Hawley in the later years of his life in the care and management of the Hartford Hospital. In this obituary sketch he does justice to his honored friend.

In one way and another Dr. Hastings was connected with the hospital from 1863 to 1892, a period of twenty-nine years. First as a visiting physician to 1883, at which time he was appointed a consulting physician and elected a member of the Executive Committee to fill the vacancies made by the death of Dr. Hawley. In 1888 he resigned these positions to become the Supervisor of the Hospital and the Old People's Home, which office he held until his resignation in 1892, when his connection with the hospital ended. He was greatly devoted to the hospital; he gave it a large portion of his time. His resignation was a great trial, but age was telling upon him and the rapid progress of medicine as applied to sanitation and to hospital management made the work of supervision too hard and difficult,—an old hospital too good to be taken down, must be changed, renovated and modernized, altogether too great a task for a man of four score, and so wedded was he to every part and feature of the old structure that the necessary changes seemed to him a reflection upon the past.

Dr. Hastings was a pleasant and genial man to meet. He had the respect and confidence of the community. He was a favorite with the patients in the hospital and popular at the Old People's Home. But he was very sensitive and tenacious of his own views. This some-

times brought him into a conflict, and it was not always easy to reach a reconciliation. He had a fair practice, but not as large as many with less ability. Advancing age and the time given to the hospital largely curtailed his business in the later years of his life.

A few years ago he lost his wife, and one son had died. The other children were living elsewhere and his home was broken up. About a year before his death he left Hartford to find a home with his son, Prof. Charles S. Hastings, in New Haven, who assures us that his father had been very contented and happy while with him. Some months ago he went to Cincinnati to visit his two surviving sisters; was taken sick and advised to return home. He reached New Rochelle, N. Y., the home of his son-in-law, Mr. John Habberton, where he died June 4th, 1898, of cancer of the stomach. His funeral was held in the Northam Memorial Chapel, many of his friends being present. The burial was in the family lot in Cedar Hill Cemetery.

Dr. Hastings was married in June, 1843, to Jane Sheldon, daughter of Charles Sheldon of Hartford. He had four children, Charles S., Professor of Physics in Sheffield Scientific School, Yale; Clarence, who died a few years ago; Frank E., living in Nassau in the Bahamas; and an only daughter, Alice L., the wife of John Habberton of New York. These children speak with tender interest of their father's kindness and love. One of them writes: "Only father's own family know the beautiful and unselfish life that he lived; the older I grow the more I appreciate the beauty and unselfishness of his character. The poor knew him well, for he was ever more faithful to them than to his rich patients. To his children he was the dearest and most affectionate of fathers, and because we feel so much we find it hard to express our love and grief."

MEMBERS OF THE SOCIETY.

HONORARY MEMBERS.

ANDREW JACOB FULLER,	Bath, Maine.
SAMUEL HAYES PENNINGTON,	Newark, N. J.
ARTHUR WARD,	Newark, N. J.
PAUL AUGUSTINE STACKPOLE,	Dover, N. H.
ADRIAN THEODORE WOODWARD,	Brandon, Vt.
WILLIAM McCOLLOM,	Brooklyn, N. Y.
SAMUEL THOMAS HUBBARD,	New York City.
AGRIPPA NELSON BELL,	Brooklyn, N. Y.
JOHN SHAW BILLINGS, U. S. A.,	New York City.
THOMAS ADDIS EMMETT,	New York City.
EDWIN MOTT MOORE,	Rochester, N. Y.
WILLIAM HENRY WELCH,	Baltimore, Md.
ROBERT FULTON WEIR,	New York City.
SIR JOSEPH LISTER,	London, Eng.
EDWARD G. JANEWAY,	New York City.
EDWARD R. SQUIBB,	Brooklyn, N. Y.
HON. CHARLES E. GROSS,	Hartford, Conn.
DAVID WEBSTER,	New York City.
ALEXANDER J. C. SKENE,	Brooklyn, N. Y.
SIR JAMES GRANT,	Ottawa, Can.
HENRY O. MARCY,	Boston, Mass.
T. MITCHELL PRUDDEN,	New York City.
WILLIAM W. KEEN,	Philadelphia.
T. GAILLARD THOMAS,	New York City.
JAMES W. McLANE,	New York City.
LANDON CARTER GRAY,	New York City.
FREDERICK H. WIGGIN,	New York City.

ACTIVE MEMBERS.

The names of those who have been Presidents are in Capitals.

HARTFORD COUNTY.

JOSEPH A. COOGAN, M.D., Windsor Locks, President.

William T. Bacon, M.D., of Hartford, Vice President.

Wilton E. Dickerman, M.D., of Hartford, Clerk.

County Reporter, Edward K. Root.

Censors—Samuel W. Irving, M.D., Joseph B. Hall, M.D., Howard O Allen, M.D.

Annual Meeting Third Wednesday in April. Semi-Annual Meeting Third Wednesday in October.

Hartford:

GURDON W. RUSSELL, No. 207 Farmington Avenue.
HENRY P. STEARNS, No. 190 Retreat Avenue.
MELANCTHON STORRS, No. 91 Ann Street.
Horace S. Fuller, No. 95 Trumbull Street.
John O'Flaherty, No. 406 Main Street.
Nathan Mayer, No. 742 Main Street.
William M. Hudson, No. 105 Elm Street.
George C. Jarvis, No. 98 High Street.
David Crary, No. 1074 Main Street.
John B. Lewis, No. 56 Prospect Street.
Daniel T. Bromley, No. 121 Pearl Street.
Gustavus P. Davis, No. 56 Prospect Street.
James Campbell, No. 2 Congress Street.
Charles E. Froelich, No. 103 Pratt Street.
Harmon G. Howe, No. 137 High Street.
William T. Bacon, No. 11 Pratt Street.
William W. Knight, No. 95 Trumbull Street.
Thomas D. Crothers, No. 50 Fairfield Avenue.
George L. Parmele, No. 65 Pratt Street.
Ellen F. H. Gladwin, No. 705 Asylum Avenue.
Samuel B. St. John, No. 68 Pratt Street.
George R. Shepherd, No. 32 Farmington Avenue.
Frederick S. Crossfield, No. 75 Pratt Street.
Marcus M. Johnson, No. 92 Pearl Street.
William D. Morgan, No. 702 Main Street.
John F. Axtelle, No. 635 Main Street.
George K. Welch, No. 103 Pratt Street.
Phineas H. Ingalls, No. 112 High Street.
Edward K. Root, No. 702 Main Street.
Luther A. Davison, No. 11 Pratt Street.
John Howard, No. 119 Trumbull Street.
Charles D. Alton, No. 86 Farmington Avenue.
Oliver C. Smith, No. 44 High Street.
Joseph E. Root, No. 67 Pearl Street.
William Porter, Jr., No. 391 Allyn Street.

Frederick T. Simpson, No. 122 High Street.
George R. Miller, No. 182 High Street.
Charles C. Beach, No. 535 Trumbull Street.
Gideon C. Segur, No. 67 Farmington Avenue.
George C. Bailey, No. 65 Church Street.
Alva E. Abrams, No. 78 High Street.
Charles E. Taft, No. 2 Garden Street.
Thomas F. Kane, No. 517 Main Street.
Arthur J. Wolff, No. 1 Spring Street.
Ansel G. Cook, No. 340 Farmington Avenue.
Edwin A. Down, No. 703 Asylum Avenue.
Daniel F. Sullivan, No. 64 Church Street.
Joseph H. Cahill, No. 51 Church Street.
Everett J. McKnight, No. 110 High Street.
Benjamin S. Barrows, No. 78 HighStreet.
Michael A. Bailey, No. 65 Church Street.
George N. Bell, No. 44 High Street.
Frank L. Waite, No. 68 Pratt Street.
Charles S. Stern, No. 75 Pratt Street.
Oliver K. Isham, No. 211 High Street.
Franklin L. Lawton, No. 295 Main Street.
John H. Rose, No. 11 Pratt Street.
John B. Waters, No. 103 Trumbull Street.
Joseph B. Hall, No. 57 Pratt Street.
Edward O. Elmer, No. 813 Park Street.
Janet M. Weir, No. 38 West Street.
John F. Dowling, No. 1214 Main Street.
Philip D. Bunce, No. 48 Pratt Street.
Homer L. Law, No. 100 Washington Street.
*Wilton E. Dickerman, No. 51 Pratt Street.
John B. Boucher, No. 306 Main Street.
Levi B. Cochran, No. 43 Farmington Avenue.
James W. Ward, No. 437 Capitol Avenue.
James H. Naylor, No. 153 Main Street.
Charles P. Botsford, No. 1393 Main Street.
James H. Standish, No. 378 Windsor Avenue.
Michael H. Gill, No. 151 Windsor Avenue.
John B. McCook, No. 390 Main Street.
John W. Felty, No. 340 Windsor Avenue.
George E. Sleeper, No. 1395 Main Street.
Frank B. Look, No. 104 Church Street.
Frank S. Snow, No. 252 Asylum Street.
Elmer E. Douglass, No. 44 Church Street.
Howard F. Smith, No. 609 Main Street.
Thomas W. Chester, No. 110 High Street.
Joseuh A. Kilbourn, No. 771 Park Street.
Philip P. Carlon, No. 21½ Church Street.
William G. Craig, No. 11 Pratt Street.

AVON:

John L. North.

BEBLIN:

Robert E. Ensign,
Charles A. Gillin.

East Berlin:

George W. Lawrence.

BRISTOL:

John J. Wilson.
William W. Horton.

CANTON—Collinsville:

George F. Lewis,
Ida Gridley-Case,
William H. Crowley.

EAST HARTFORD:

Edward H. Griswold,
Thomas J. O'Connell,
Walter G. Murphy,

Burnside:

Franklin H. Mayberry,

EAST WINDSOR—Broadbrook:
Howard O. Allen.

ENFIELD:
Rial Strickland.

Thompsonville:
Edward F. Parsons.
George F. Finch.
Henry G. Varno.
Thomas F. Reardon.

Hazardville:
Simon W. Houghton.

FARMINGTON:
Franklin Wheeler.
Charles Carrington.

GLASTONBURY:
Henry C. Bunce.
Charles G. Rankin.
William S. Kingsbury.

South Glastonbury:
Henry M. Rising.
Harry B. Rising.

MANCHESTER,
Francis H. Whiton.
John T. Dooley.

South Manchester:
Julian N. Parker.
William R. Tinker.
Thomas H. Weldon.

NEW BRITAIN:
*BENJAMIN N. COMINGS.
*George Clary.
Edwin B. Lyon.
Jay S. Stone.
Erastus P. Swasey.
Michael J. Coholan.
George J. Holmes.
Lawrence M. Cremin.
Wilbur T. Bunnell.
Samuel W. Irving.
Robert M. Clark.
Hermann Strosser.
Arvid Anderson.
Harris L. Paige.

PLAINVILLE:
John N. Bull.
Theodore G. Wright.

ROCKY HILL:
*Rufus W. Griswold.

SIMSBURY—Tariffville:
Charles M. Wooster.

SOUTHINGTON:
Willard G. Steadman.

SOUTH WINDSOR:
Mary S. Tudor.
Henry A. Deane.

SUFFIELD:
Jarvis K. Mason.
Matthew T. Newton.
Philo W. Street.

WEST SUFFIELD:
William E. Caldwell.

WETHERSFIELD:
Abner S. Warner.
Edward G. Fox.
Arthur W. Howard.

WINDSOR:
*Samuel A. Wilson.
Newton S. Bell.

WINDSOR LOCKS:
Sidney R. Burnap.
Joseph A. Coogan.
William J. Coyle. 148

NEW HAVEN COUNTY.

OLIVER T. OSBORNE, M.D., of New Haven, President.
CARL E. MUNGER, M.D., of Waterbury, Vice President.
JOSEPH H. TOWNSEND, M.D., of New Haven, Clerk.
County Reporter, F. N. SPERRY, M.D., of New Haven.
Censors—C. S. RODMAN, M.D., F. H. WHEELER, M.D.,
H. L. SWAIN, M.D.

Annual Meeting, third Thursday in April; semi-annual, third Thursday in October.

NEW HAVEN:
S. G. Hubbard, No. 23 College Street.
C. A. LINDSLEY, No. 15 Elm Street.

*Exempted from taxation.

John Nicoll, No. 86 Broadway.
Moses C. White, No. 214 Crown Street.
T. H. Bishop, No. 215 Church Street.
FRANCIS BACON, No. 32 High Street.
W. L. Bradley, No. 426 Orange Street.
A. E. Winchell, No. 60 Pearl Street.
Robert S. Ives, No. 339 Temple Street.
Evelyn L. Bissell, No. 308 Crown Street.
Arthur Ruickoldt, No. 71 Olive Street.
Walter Judson, No. 1145 Chapel Street.
Frederick Bellosa, No. 209 Orange Street.
S. D. Gilbert, No. 27 Wall Street.
S. H. Chapman, No. 193 Church Street.
J. P. C. Foster, No. 109 College Street.
F. O. White, No. 514 Howard Avenue.
W. H. Carmalt, No. 87 Elm Street.
T. H. Russell, No. 137 Elm Street.
F. H. Whittemore, No. 13 Elm Street.
C. P. Lindsley, No. 37 Elm Street.
H. Fleischner, No. 928 Grand Avenue.
M. Mailhouse, No. 151 Meadow Street.
M. C. O'Connor, No. 882 State Street.
Charles E. Park, No. 132 Olive Street.
F. E. Beckwith, No. 139 Church Street.
Gustavus Eliot, No. 209 Church Street.
J. E. Stetson, No. 106 High Street.
J. F. Luby, No. 667 Grand Avenue.
William W. Hawkes, No. 35 High Street.
Frank H. Wheeler, No. 221 Crown Street.
Herbert E. Smith, Medical College
Benjamin L. Lambert, No. 358 Howard Avenue
F. W. Wright, No. 413 Orange Street.
Edward K. Roberts, No. 244 Grand Avenue.
Oliver T. Osborne, No. 252 York Street.
Lucy M. Peckham, No. 145 Green Street.
William G. Daggett, No. 189 Church Street.
Louis S. DeForest, No. 54 Wall Street.
Henry L. Swain, No. 232 York Street.
Mary B. Moody, Sherland Avenue cor. E. Grand Avenue.
G. F. Converse, junction Whalley Avenue and Goffe Street.
*J. H. Townsend, No. 39 College Street.
T. M. Cahill, No. 227 Franklin Street.
C. J. Foote, No. 26 Elm Street.
Marvin Smith, No. 73 Pearl Street.
S. J. Maher, No. 212 Orange Street.
Jay W. Seaver, No. 25 Lynwood Street.
Louis B. Bishop, No. 77 Whitney Avenue.
H. W. Ring, No. 46 Elm Street.
W. C. Welch, No. 44 College Street.
A. O. Baribault, No. 528 Chapel Street.
J. F. Baker, No. 630 State Street.
Rollin McNeil, No. 149 Bradley Street.
Edward M. McCabe, No. 224 Orange Street
James M. Reilly, No. 337 Cedar Street.
Clarence E. Skinner, No. 67 Grove Street.
N. R. Hotchkiss, No. 150 Shelton Avenue.
Benjamin A. Cheney, No. 40 Elm Street.
Charles A. Tuttle, No. 129 Whalley Avenue.
Harry B. Ferris, No. 118 York Street.
Edward S. Thomson, No. 190 Grand Avenue.
Henry F. Klenke, No. 730 Grand Avenue.
Leonard W. Bacon, Jr., No. 294 Elm Street.

Paul S. Robinson, No. 164 Grand Avenue.
Arthur N. Alling, No. 199 York Street.
A. W. Evans, No. 2 Hillhouse Avenue.
R. A. McDonnell, No. 1142 Chapel Street.
E. P. Pitman, No. 52 Sylvan Avenue.
James A. Moore, No. 223 Grand Avenue.
Isaac N. Porter, No. 198 Dixwell Avenue.
Ernest H. Arnold, No. 46 York Square.
Robert E. Peck, No. 56 Howe Street.
Daniel A. Jones, No. 746 Chapel Street.
William C. Wurtenberg, No. 42 Elm Street.
Chauncey S. Lamb, No. 10 Park Street.
Robert O. Moody, No. 1204 Chapel Street.
Edward S. Moulton, No. 252 York Street.
Frederick N. Sperry, No. 76 Wooster Street
William F. Verdi, No. 172 St. John Street.
Charles J. Bartlett, Medical College.
Morris D. Slattery, No. 352 Howard Avenue
John J. Seibold, No.235 Blatchley Avenue.
Ward H. Sanford, No. 39 Edwards Street.
William M. Kenna, No. 129 Olive Street.
Ambrose K. Brennan, No. 179 Franklin Street.
Ralph S. Goodwin, Jr., No. 1079 Chapel Street.
Leonard C. Sanford, No. 216 Crown Street.
Willis H. Crowe, No. 68 Whalley Avenue.
Archibald McNeil, No. 51 Livingstone Street.
Charles H. Robbins, 329 Grand Avenue.
Louis M. Gompertz, 39 Wooster Place.
Alfred G. Nadler, 122 Olive Street.
T. E. Beard, Jr., 163 Wooster Street.
William Sprenger, No. 276 Crown Street.
Joseph B. Monahan, 228 Congress Avenue
Frederick C. Bishop, 1223 Chapel street.
James H. Flynn, 426 Howard Avenue.
Frank A. Kirby, 214 Dixwell Avenue.
Charles D. Phelps, 472 Orange Street.
William J. Sheehan, 383 Howard Avenue.
Clifford W. Kellogg, No. 233 York Street.
John F. Sullivan, No. 304 Exchange Street.
John S. Ely, No. 60 Wall Street.
Peter F. Metz, No. 277 Crown Street.
Horst R. Oertel, No. 137 College Street.
Donald R. Hinckley, No. 35 College Street.
Michael J. Sheahan, No. 333 Grand Avenue.
Maximilian L. Loeb, No. 74 York Street.
Edward F. McIntosh, No. 192 York Street.

Westville:

A. W. Marsh.
William N. Winne.

Ansonia:

Louis E. Cooper,
Frederick C. Goldstein.

Branford:

C. W. Gaylord,
Walter Zink,
A. J. Tenny,
George H. Townsend.

Cheshire:

E. T. Cornwall.

Derby:

T. J. O'Sullivan.
F. N. Loomis.
Royal W. Pinney.
Elmer T. Sharpe.

East Haven:

Charles W. Holbrook.

Guilford:

George H. Beebe.

†P. O. New Haven.

*Exempted from taxation.

HAMDEN:

*E. D. Swift.

Whitneyville:

Henry H. Smith.

MADISON:

*D. M. Webb.

MERIDEN:

*Asa H. Churchill,
C. H. S. Davis,
N. Nickerson,
A. W. Tracy,
E. T. Bradstreet,
J. D. Eggleston,
Edward W. Smith,
O. J. D. Hughes,
Ava H. Fenn,
E. W. Pierce,
S. D. Otis,
F. P. Griswold,
E. D. Hall,
H. W. Delesdernier,
H. A. Meeks,
John L. Gartland,
William Galvin,
J. W. H. La Pointe.

MILFORD:

E. B. Heady,
E. C. Beach,
A. L. Tuttle.

NAUGATUCK:

Frank B. Tuttle,
Thomas M. Bull,
Frederick A. Spring,
James W. Robbins,
William J. Delaney,
Edwin H. Johnson.

NORTH HAVEN:

R. B. Goodyear.

ORANGE—West Haven:

J. F. Barnet,
William V. Wilson,
Durell Shephard.

OXFOLD:

Lewis Barnes.

SEYMOUR:

Frank A. Benedict,
Elias W. Davis.

WALLINGFORD:

J. D. McGaughey,
C. H. Atwater,
William S. Russell,
William P. Wilson.

WATERBURY:

Edward L. Griggs,
F. E. Castle,
E. W. McDonald,
Walter H. Holmes,
Walter L. Barber,
C. W. S. Frost,
Charles S. Rodman,
J. M. Benedict,
Thomas L. Axtelle,
Carl E. Munger,
Bernard A. O'Hara,
John F. Hayes,
Caroline R. Conkey,
Augustin A. Crane,
Patrick T. O'Connor,
John D. Freney,
Charles A. Hamilton,
George O. Robbins,
Isaac P. Fiske,
Charles H. Brown,
Edward W. Goodenough,
Myron L. Cooley,
Frederick G. Graves,
George Holbrook,
John R. Poore,
James L. Moriarty,
Daniel J. Maloney,
Thomas J. Kilmartin.

Waterville:
Joseph H. Holroyd, —195

*Exempted from taxation.

NEW LONDON COUNTY.

WILLIAM WITTER, M.D., of Norwich, President.

EDMUND P. DOUGLASS, M.D., of Groton, Vice President.

CHARLES B. GRAVES, M.D., No. 22 Franklin Street, New London, Clerk.

County Reporter—CHARLES B. GRAVES, M.D., of New London.

Censors—WILLIAM WITTER, M.D., WM. M. BURCHARD, M.D.,
L. S. PADDOCK, M.D.

Annual Meeting First Thursday in April; semi-annual, first Thursday in October.

COLCHESTER:

Myron W. Robinson,
William A. Korn,
James T. Mitchell.

EAST LYME—Niantic:

Frederick H. Dart,
Edward C. Chipman.

GRISWOLD—Jewett City:

George H. Jennings.

GROTON:

Edmund P. Douglass,
Frank W. Hewes.

LEBANON:

Norman L. Drake.

MONTVILLE—Uncasville:

Morton E. Fox,
William M. Burchard.

NEW LONDON:

Abiel W. Nelson,
FRANCIS N. BRAMAN,
John G. Stanton,
*Charles B. Graves,
Joseph R. Crofton,
Hiram B. Thomson,
Harold H. Heyer,
Carlisle F. Ferrin,
Thomas W. Rogers,
Carl A. Williams,
J. Clifton Taylor,
Griswold Brazaw.

NORWICH:

Lewis S. Paddock,
William Witter,
William S. C. Perkins,
Patrick Cassidy,
Leonard B. Almy,
Anthony Peck,
Julian LaPierre,
E. P. Brewer,
N. P. Smith,
Patrick H. Harriman,
Witter K. Tingley,
William T. Browne,
George R. Harris,
Charles H. Perkins,
Rush W. Kimball,
Charles V. Buttler,
James J. Donahue,
Harvey E. Higgins.

Taftville:

George Thompson.

Yantic:

Herbert H. Howe.

STONINGTON:

Charles E. Brayton,
George D. Stanton.

Mystic:

Frank A. Coates,
A. M. Purdy.

Old Mystic:

*Albert T. Chapman,
William H. Gray.

VOLUNTOWN:

Warren Russell Davis.

WATERFORD:

George M. Minor. —51

*Exempted from taxation.

FAIRFIELD COUNTY.

WATSON E. RICE, M.D., of Stamford, President.

LOREN T. DAY, M.D., of Westport, Vice President.

WILLIAM GRAY, M.D., of Bridgeport, Clerk.

County Reporter—H. ADALINE THOMPSON, M.D., of Bridgeport.

Censors—J. W. WRIGHT, M.D., W. H. DONALDSON, M.D., J. C. LYNCH, M.D.

Annual Meeting, Second Tuesday in April, at Bridgeport; semi-annual in October.

BRIDGEPORT:

Andrew J. Smith, No. 85 Barnum Avenue.
GEORGE L. PORTER, No. 266 State Street.
Robert Lauder, No. 192 Fairfield Avenue.
Curtis H. Bill, No. 285 State Street.
N. E. Wordin, No. 174 Fairfield Avenue.
F. M. Wilson, No. 290 Myrtle Avenue.
T. F. Martin, No. 115 Golden Hill Street.
F. B. Downs, No. 256 State Street.
J. W. Wright, No. 229 State Street.
A. W. Lyons, No. 289 State Street.
*A. A. Holmes, No. 316 Broad Street.
Charles C. Godfrey, No. 248 State Street.
S. M. Garlick, No. 316 State Street.
Henry Blodget, No. 317 State Street.
J. C. Lynch, No. 284 State Street.
C. C. Hoyt, No. 623 State Street.
G. W. Osborn, No. 339 Broad Street.
J. R. Topping, No. 131 East Main Street.
B. F. White, No. 276 State Street.
Jacob May, No. 248 State Street.
F. C. Graves, No. 309 State Street.
G. B. Cowell, No. 120 East Washington Avenue.
C. N. Haskell, No. 343 State Street.
George E. Ober, No. 129½ East Main Street.
B. DeF. Sheedy, No. 311 State Street.
D. C. DeWolfe, No. 289 Fairfield Avenue.
Harry S. Miles, No. 290 Myrtle Avenue.
Charles L. Banks, 248 State Street.
Fessenden L. Day, No. 317 State Street.
Edward Fitzgerald, No. 126 East Washington Avenue.
George S. Ford, No. 231 State Street.
Robert G. Leverty, No. 93 Washington Avenue.
Frank M. Tukey, No. 293 State Street.
*William W. Gray, No. 358 State Street.
James D. Gold, No. 282 State Street.
Reuben A. Lockhart, No. 8 North Washington Avenue.
Harriet A. Thompson, No. 233 Warren Street.
Frederick J. Adams, No. 252 State Street.
W. J. A. O'Hara, No. 259 East Main Street.
David M. Trecartin, No. 315 State Street.
G. Stanley Heft, No. 254 State Street.
Andrew M. Ewing, Colorado Avenue.
Michael M. Rowe, No. 614 Main Street.
Harry W. Fleck, No. 294 State Street.
Thomas L. Ellis, No. 316 State Street.

*Exempted from taxation.

BRIDGEPORT—*Continued:*

Charles R. Townsend, 254 State Street.
Herbert E. Smyth, No. 27 Courtland Street.
Harry R. Bennett, No. 341 State Street.
J. Murray Johnson, No. 313 State Street.

BETHEL:

A. E. Barber.
Charles R. Hart.
George DeWitt Wright.

BROOKFIELD:

Junius F. Smith.

DANBURY:

F. P. Clark,
E. A. Stratton,
W. S. Watson,
D. Chester Browne,
H. F. Brownlee,
John H. Benedict,
Nathaniel Selleck,
Clayton P. Bennett,
George E. Lemmer,
Charles F. Craig,
John A. Wade,
William F. Gordon.

DARIEN:

George H. Noxon.

FAIRFIELD:

W. H. Donaldson.

Greenfield Hill:

M. V. B. Dunham.

Southport:

Robert E. Purdue,
Joseph L. Hetzel.

GREENWICH:

Frank Terry Brooks.

HUNTINGTON—Shelton:

Gould A. Shelton,
D. A. Richardson,
William S. Randall.

Stepney:

SETH HILL.

NEW CANAAN:

Clarence H. Scoville.

NEWTOWN:

Edward M. Smith.

SANDY HOOK:

James W. Gordon.

NORWALK:

James G. Gregory,
R. L. Higgins,
S. H. Huntington,
William J. Tracey.

South Norwalk:

W. C. Burke, Jr.,
A. N. Clark,
C. G. Bohannan,
Lauren M. Allen,
Henry C. Sherer,
John T. Kennedy,
Jean Dumortier,
Wright B. Bean.

East Norwalk:

Frederick B. Baker.

REDDING:

Ernest H. Smith.

RIDGEFIELD:

Russell W. Lowe.
Willis E. Weed.

STAMFORD:

A. M. Hurlburt,
Samuel Pierson,
A. N. Phillips,
C. R. Hexamer,
P. P. Van Vleet,
F. Schavior,
Wm. A. B. Treadway,
F. P. Rogers,
Rosavelle G. Philip,
James A. Meek,
George Sherrill,
Nathaniel P. Washburne,
Watson E. Rice,
Frank M. Tiffany,
Daniel A. Hanrahan,
Frederick L. Mullville,
David W. McFarland.
Myre J. Brooks,
Leonard W. Munson.

STRATFORD:

W. B. Cogswell,
G. F. Lewis.

WESTON—Lyon's Plains:

F. Gorham.

Westport:

George B. Bouton,
F. Powers,
Loren T. Day,
F. D. Ruland,
L. H. Wheeler,
J. M. Nolan.

Wilton:

A. B. Gorham.

Georgetown:

Howard P. Mansfield.

South Wilton:

Edward Everett Smith.

—122

WINDHAM COUNTY.

OMAR LARUE, M.D., of Putnam, President.

S. B. Overlock, M.D., of Pomfret, Vice President.

Laura H. Hills, M.D., 17 North Street, Willimantic, Clerk.

County Reporter—E. H. Davis, M.D., of Plainfield.

Censors—Lowell Holbrook, M.D., E. H. Davis, M.D., J. B. Kent, M.D.

Brooklyn:

A. H. Tanner.

Chaplin:

Charles M. Knight.

Danielson:

RIENZI ROBINSON,
Nathaniel Hibbard,
W. H. Judson,
C. J. Le Clair,
Frank H. Coops,
Clarence Simonds.

Killingly:

Ashael E. Darling,
Henry L. Hammond.

East Killingly:

Charles E. Hill.

Plainfield:

E. H. Davis.

Moosup:

Charles N. Allen,
W. W. Adams.

Central Village:

James L. Gardner.

Pomfret:

S. B. Overlock.

Abington:

Ezra B Pike.

Putnam:

John B. Kent,
F. A. Morrell,
Omar LaRue.

Thompson:

LOWELL HOLBROOK.

North Grosvenordale:

J. F. McIntosh.

Windham:

F. E. Guild.

Willimantic:

Frederick Rogers,
T. MORTON HILLS,
C. J. Fox,
T. R. Parker,
John Weldon,
A. D. David,
R. C. White,
George W. May,
*Laura H. Hills.

Woodstock—East Woodstock:

Charles C. Gildersleeve.

Woodstock Valley:

Henry R. Lowe. 35

*Exempted from taxation.

LITCHFIELD COUNTY.

EDWARD H. WELCH, M.D., of West Winsted, President.
JOHN L. BUEL, M.D., of Litchfield, Vice President.
JOHN C. KENDALL, M.D., of Norfolk, Clerk.
County Reporter—ELIAS PRATT, M.D., of Torrington.
Censors—J. L. BUEL, M.D., W. L. PLATT, M.D.,
S. G. HOWD, M.D.

Annual Meeting, fourth Tuesday in April; semi-annual, second Tuesday in October.

BARKHAMSTED—Riverton:
H. D. Moore.

CORNWALL—Cornwall Bridge:
W. M. S. Curtis.

GOSHEN:
J. H. North.

KENT:
W. M. Barnum.

LITCHFIELD:
C. O. Belden,
J. T. Sedgwick,
John L. Buel,
W. S. MacLaren,
Charles I. Page,
Etta May Hadley-Judd.
Charles S. Warner.

NEW HARTFORD:
*Jerry Burwell,
Josiah Swett.

NEW MILFORD:
G. E. Staub.

Gaylordsville:
H. B. Griswold.

NORFOLK:
*John C. Kendall,
I. L. Hamant,
Lucius D. Bulkley,
Frederick S. Dennis.

NORTH CANAAN—Canaan:
C. W. Camp,
F. H. Lee.

PLYMOUTH—Terryville:
W. P. Swett,
W. W. Wellington,
M. P. Robinson.

SALISBURY:
P. H. Sellew.

Lakeville:
W. Bissell,
G. H. Knight,
W. B. Bissell.

SHARON:
C. W. Bassett.

THOMASTON:
RALPH S. GOODWIN,
George D. Ferguson.

TORRINGTON:
William L. Platt,
T. S. Hanchett,
Elias Pratt,
J. W. Johnson,
J. S. Bissell,
J. D. Hayes,
A. L. House,
A. J. Barker,
C. H. Carlin,
Sanford H. Wadhams.

WASHINGTON:
ORLANDO BROWN,
William J. Ford.

New Preston:
R. A. Marcy.

WATERTOWN:
W. S. Munger,
Eugene C. French.
Ernest K. Loveland.

WINCHESTER—Winsted:
E. L. Pratt,
W. S. Hulbert,
Salmon G. Howd.

West Winsted:
E. H. Welch,
W. S. Richards.

WOODBURY:
D. R. Rodger. —49

*Exempted from taxation.

MIDDLESEX COUNTY.

ARTHUR J. CAMPBELL, M.D., of Middle Haddam, President.

GEORGE N. LAWSON, of Middle Haddam, Vice President.

FRANK K. HALLOCK, M.D., of Cromwell, Clerk.

County Reporter—GEORGE N. LAWSON, M D. Middle Haddam.,

Censors—S. W. TURNER, M.D., GEORGE W. BURKE, M.D.,
M. C. HAZEN, M.D.

Annual Meeting, second Thursday in April: semi-annual, second Thursday in October

CHATHAM—Middle Haddam:
George N. Lawson.

East Hampton:
Albert Field.

CHESTER.
*Sylvester W Turner,
Fred. Sumner Smith.

CLINTON:
Herbert S. Reynolds.

CROMWELL:
*Frank K. Hallock,
Charles E. Bush.

DURHAM:
Earl Mathewson.

EAST HADDAM:
M. W. Plumstead.
Emma J. Thompson.

ESSEX:
Charles H. Hubbard.

HADDAM:
Miner C. Hazen.

KILLINGWORTH:
Edward P. Nichols.

MIDDLETOWN:
*George W. Burke,
FRANCIS D. EDGERTON,
Wm. E. Fisher,
Charles E. Stanley,
James M. Keniston,
Henry S. Noble,
Michael D. Murphy,
John E. Bailey,
Arthur J. Campbell,
Arthur B. Coleburn,
J. Francis Calef,
John E. Loveland,
Kate C. Mead,
Frank E. Coudert,
Lewis Maitland,
Daniel A. Nolan,
Roger C. Downey.
Charles W. Page.
Allen Rose Defendorf.

OLD SAYBROOK:
John H. Granniss,
William D. Spencer.

PORTLAND:
Cushman A. Sears.
Frank E. Potter.
James Murphy.

SAYBROOK—Deep River:
Edwin Bidwell.
H. T. French.

WESTBROOK:
Thomas B. Bloomfield,
Frederick S. Cowles,

*Exempted from taxation.

TOLLAND COUNTY.

WILLIAM C. HAVEN, M.D., of Coventry, President.

Frank L. Smith, M.D., of Stafford Springs, Vice President.

Edwin T. Davis, M.D., of Ellington, Clerk.

County Reporter—C. B. Newton, M.D., Stafford Springs.

Censors—E. P. Flint, M.D , E. K. Leonard, M.D.,
C. F. Sumner, M.D.

Annual Meeting, third Tuesday in April; semi-annual, third Tuesday in October.

Bolton:
*CHAS. F. SUMNER.

Coventry:
William C. Haven.

South Coventry:
W. L. Higgins.
Philip H. Edwards.

Ellington:
*E. T. Davis.

Mansfield—Mansfield Depot:
F. E. Johnson.

Rockville:
Frederick Gilnack.
E. K. Leonard.
T. F. Rockwell.
E. P. Flint.
T. F. O'Laughlin.

Somers:
A. L. Hurd.

Stafford—Stafford Springs:
C. B. NEWTON,
F. L. Smith.
Daniel Sullivan.

Tolland:
W. N. Simmons.

Vernon:
*A. R. GOODRICH. —18

*Exempted from taxation.

ALPHABETICAL LIST

OF THE

MEMBERS OF THE CONNECTICUT MEDICAL SOCIETY,

With date and place of Graduation, and Post-Office Address.

Name.	Medical Graduation.	P. O. Address.
Abrams, Alva Elnathan,	Albany, '81,	Hartford.
Adams, Frederick Joseph,	Univ. N. Y., '95,	Bridgeport.
Adams, William Waldo,	Bellevue, '91,	Moosup.
Allen, Charles Noah,	Univ. Vt., '81,	Moosup.
Allen, Howard Oliver,	Univ. N. Y., '79,	Broad Brook.
Allen, Lauren Melville,	P. & S., N. Y., '80,	So. Norwalk.
Alling, Arthur Nathaniel, B.A.,	P. & S., N. Y., '91,	New Haven.
Almy, Leonard Ballou, B.A., '72,	Bellevue, '76,	Norwich.
Alton, Charles De Lancey,	Bellevue, '75,	Hartford.
Anderson, Arvid,	Univ. Mich., '93.	New Britain.
Arnold, Ernest Hermann,	Yale, '94,	New Haven.
Atwater, Caleb Huntington,	P. & S., N. Y., '71,	Wallingford.
Axtelle, John Franklin,	L. I. Hosp. Coll., '71,	Hartford.
Axtelle, Thomas Lincoln,	Bellevue, '81,	Waterbury.
Bacon, Francis,	Yale, '53,	New Haven.
Bacon, Leonard Woolsey, Jr.,	Yale, '92,	New Haven.
Bacon, William Turner, B.A., Yale, '68, M.A., '71,	Univ. N. Y., '71,	Hartford.
Bailey, George Cornelius,	Univ. N. Y., '86,	Hartford.
Bailey, John Elmore,	P. & S., N. Y., '85,	Middletown.
Bailey, Michael Angelo,	P. & S., Balt., '93,	Hartford.
Baker, Frederick Birdseye,	Univ. Md., '88,	E. Norwalk.
Baker, John Francis,	L. I. Hosp. Coll., '89,	New Haven.
Banks, Charles Lincoln,	P. & S., N. Y., '91,	Bridgeport.
Barber, Alvin Elizur,	Berkshire, '54,	Bethel.
Barber, Walter Lewis,	Bellevue, '73,	Waterbury.
Baribault, Arthur Octave,	Vict. Med. Col., '89,	New Haven.
Barker, Abiam James,	Bellevue, '97,	Torrington.
Barnes, Irving Ferguson,	Univ. N. Y., '90,	Collinsville.
Barnes, Lewis, B.A., M.A., '47,	Buffalo Univ., '50,	Oxford.
Barnett, John Frederick,	Yale, '69,	West Haven.
Barnum, Walter Milo,	P. & S., N. Y., '83,	Kent.
Barrows, Benj. Safford, Ph.B., '83,	Univ. N. Y., '87,	Hartford.
Bartlett, Charles Joseph, B. A., Yale '92; M.A., Yale '94,	Yale '95,	New Haven.
Bassett, Clarence Wheeler,	Univ. N. Y., '82,	Sharon.
Beach, Charles Coffing,	P. & S., N. Y., '82,	Hartford.
Beach, Edward Charles,	Yale, '88	Milford.
Bean, Wright Butler,	P. & S., N. Y., '95.	South Norwalk.
Beard, Theodore Edward, Jr.,	Yale, '97.	New Haven.
Beckwith, Frank Edwin, M.A., '81,	P. & S., N. Y., '71,	New Haven.

In preparing this list the Secretary has followed the list in the Proceedings of 1892, made with great care and labor by Dr. J. B. Lewis for the Centennial year. It may be relied upon as being correct.

Name.	Medical Graduation.	P. O. Address.
Beebe, George Hoxie,	Univ. N. Y., '78,	Guilford.
Belden, Charles Ogilvie,	P. & S., N. Y., '82,	Litchfield.
Bell, George Newton,	Yale, '92,	Hartford.
Bell, Newton Stephen,	Univ. Vt., '64,	Windsor.
Bellosa, Frederick,	Yale, '72,	New Haven.
Benedict, Frank Allen,	P. & S., N. Y., '87,	Seymour.
Benedict, John Howe,	Conn. Med. Soc., '58,	Danbury.
Benedict, John Mitchell,	Univ. N. Y., '82,	Waterbury.
Bennett, Clayton Powers,	P. & S., N. Y., '90,	Danbury.
Bennett, Harry Raymond,	Univ. Vt., '96,	Bridgeport.
Bidwell, Edwin,	Yale, '47,	Deep River.
Bill, Curtis Harvey,	Univ. N. Y., '59,	Bridgeport.
Bishop, Frederick Courtney, B.A., Yale, '92,	Yale, '95,	New Haven.
Bishop, Louis Bennett, B.A., 86,	Yale, '88,	New Haven.
Bishop, Timothy Huggins,	Yale, '60,	New Haven.
Bissell, Evelyn Lyman,	Yale, '60,	New Haven.
Bissell, Jerome Samuel,	Yale, '94,	Torrington.
Bissell, William, B.A., '53,	Yale, '56,	Lakeville.
Bissell, William Bascom, A.B., Yale '88.	P. & S., N. Y., '92,	Lakeville.
Blodget, Henry,	Bellevue, '81,	Bridgeport.
Bloomfield, Thomas Blanch,	P. & S., N. Y., '76,	Westbrook.
Bohannan, Charles Gordon,	Univ. N. Y., '78,	So. Norwalk.
Bolton, James Robert,	Univ. N. Y., '86,	Litchfield.
Botsford, Charles Porter,	Yale '94,	Hartford.
Boucher, John Bernard,	P. & S., Balt., '94,	Hartford.
Bouton, George Beriah,	Y., '56; N. Y. M., '56,	Westport.
Bradley, William Lockwood, B.A., '60,	Yale, '64,	New Haven.
Bradstreet, Edward Thomas, B.A., '74,	P. & S., N. Y., '77,	Meriden.
Braman, Francis Nelson,	Bellevue, '66,	New London.
Brayton, Charles Erskine,	P. & S., N. Y., '73,	Stonington.
Brazaw, Griswold.	Bellevue, '97.	New London.
Brennan, Ambrose Kirk,	Yale, '93,	New Haven.
Brewer, Edward Pliny, Ph.D.,	Dartmouth, '79,	Norwich.
Bromley, Daniel Tyler,	Yale, '67.	Hartford.
Brooks, Frank Terry, B.A., Yale,	P. & S., '93,	Greenwich.
Brooks, Myre Joel,	Yale, '67.	Stamford.
Brown, David Chester,	Yale, '84,	Danbury.
Brown, Charles Henry,	Univ. N. Y., '93,	Waterbury.
Browne, William Tyler, Ph.B., '78,	Harvard, '82,	Norwich.
Brownlee, Harris Fenton,	P. & S., N. Y., '88,	Danbury.
Bulkley, Lucius Duncan, M.A.,	P. & S., N. Y., '69,	Norfolk.
Buel, John Laidlaw,	P. & S., N. Y., '88,	Litchfield.
Bull, John Norris,	P. & S., N. Y., '78,	Plainville.
Bull, Thomas Marcus,	P. & S., N. Y., '87,	Naugatuck.
Bunce, Henry Clinton,	Yale, '50,	Glastonbury.
Bunce, Philip Dibble, A.B., Yale, '88.	P. & S., N. Y., '91,	Hartford.
Bunnell, Wilbur Pitkin,	Univ. N. Y., '84,	New Britain.
Burchard, William Metcalf,	Georgetown, '66,	Uncasville.
Burke, George Whitney, B.A., '91,	Yale, '43,	Middletown.
Burke, William Craige, Jr.,	L. I. Hosp. Coll., '75,	So. Norwalk.
Burke, William Patrick John,	Yale, '90,	New Haven.
Burnap, Sidney Rogers, A.B., Union, '58,	P. & S., N. Y., '62,	W'ds'r Locks.
Burns, Edward.	Univ. N. Y., '82,	New Britain.
Burwell, Jeremiah,	Berkshire, '39,	New Hartford.

Name.	Medical Graduation.	P. O. Address.
Bush, Charles Ellsworth,	Yale, '94,	Cromwell.
Buttler, Charles Voorhes,	Univ. N. Y., '93,	Norwich.
Cahill, Joseph Henry,	Balt. Univ., '92,	Hartford.
Cahill, Thomas Matthew,	Yale, '88,	New Haven.
Caldwell, William Elry,	Balt. Med. Col.,'95.	W. Suffield.
Calef,Jeremiah Francis, B.A., '77,	Yale, '80,	Middletown.
Camp, Charles Welford,	Univ. N. Y., '75,	Canaan.
Campbell, Arthur Joseph,	P. & S., Balt., '85,	Middletown.
Campbell, James,	Univ. Vt., '71,	Hartford.
Carlin, Charles Henry,	Univ. Mich., '96,	Torrington.
Carlon, Philip Patrick,	Univ. N. Y., '90,	Hartford.
Carmalt, William Henry, M.A., '81,	P. & S., N. Y., '61,	New Haven.
Carrington, Charles,	P. & S., N. Y., '60,	Farmington.
Case, Ida R. Gridley, B.A., Wes. Univ., '86; M.A., Wes., '88,	P. & S., Boston, '89,	Collinsville.
Cassidy, Patrick,	Univ. Vt., '65,	Norwich.
Castle, Frank Edwin,	Yale, '70,	Waterbury.
Chapman, Albert Taylor,	P. & S., N. Y., '64,	Old Mystic.
Chapman, Sherman Hartwell, B.A., '53, M.A., '66,	P. & S., N. Y., '69,	New Haven.
Cheney, Benjamin Austin, B.A., '88,	Yale, '90,	New Haven.
Chester, Thomas Weston, B.A., Rutgers, '92. M.A., '95.	P. & S., N. Y., '95.	Hartford.
Chipman, Edward Clifford,	P. & S., N. Y., '91,	Niantic.
Churchill, Asa Hopkins,	Yale, '57,	Meriden.
Clark, Arthur Norman,	P. & S., N. Y., '83,	So. Norwalk.
Clark, Franklin Pierce,	P. & S., N. Y., '76,	Danbury.
Clark, Robert Moses,	Univ. Pa., '91,	New Britain.
Clary, George, A.B., '52, Dartmouth,	Yale, '57,	New Britain.
Coates, Franklin Avery, A.B., '72; A.M., '75,	P. & S., N. Y., '75,	Mystic.
Cochran, Levi Bennett,	Univ. Pa., '93,	Hartford.
Cogswell, William Badger,	Bellevue, '81,	Stratford.
Coholan, Michael James,	Univ. N. Y., '65,	New Britain.
Coleburn, Arthur Burr,	P. & S., N. Y., '90,	Middletown.
Comings, Benjamin Newton, B. A., M. A., Dartmouth, '42,	Dartmouth, '42, Castleton, Vt., '45,	New Britain.
Conkey, Caroline Root,	W. Med., N. Y., '81,	Waterbury.
Converse, George Frederick,	Yale, '87,	New Haven.
Coogan, Joseph Albert,	Bellevue, '76,	W'ds'r Locks.
Cook, Ansel Granville,	P. & S., N. Y., '87,	Hartford.
Cooley, Myron Lynus,	Buffalo, '86,	Southbury.
Cooper, Louis Edward, Ph.B., '84,	Yale, '86,	Ansonia.
Coops, Frank Harvey,	P. & S., Balt., 96,	Danielson.
Cornwall, Edward Thomas,	P. & S., N. Y., '81,	Cheshire.
Coudert, Frank Edmonds, Ph.D.,	Univ. N. Y., '90,	Middletown.
Cowell, George B.,	P. & S., N. Y., '88,	Bridgeport.
Cowles, Frederick Stanley,	Yale, '93,	Westbrook.
Coyle, William Joseph,	Buf'lo Med.Col.,'85,	Windsor Locks.
Craig, Charles Franklin,	Yale, '94,	Danbury.
Craig, William Gibson,	Jefferson, '92,	Hartford.
Crane, Augustin Averill, B.A., '85,	Yale, '87,	Waterbury.
Crary, David,	Yale, '69,	Hartford.
Cremin, Lawrence Michael,	Univ. N. Y., '81,	New Britain.
Crighton, Andrew John,	P. & S., Balt., '91,	Willimantic.

Name.	Medical Graduation.	P. O. Address.
Crofton, Joseph Richard,	P. & S., N. Y., '89,	New London.
Crossfield, Frederick Solon,	Bellevue, '78,	Hartford.
Crothers, Thomas Davison,	Albany, '65,	Hartford.
Crowe, Willis Hanford,	P. & S., N. Y., '95,	New Haven.
Crowley, William Holmes,	Buf. Med. Col., '90,	Collinsville.
Curtiss, William Martin Stanley,	Univ.S.M.,Balt.'93,	Cornwall B.
Daggett, William Gibbons, B.A., '80,	Univ. Pa., '84,	New Haven.
Darby, Charles Sinclair,	Charl'st'n Med., '60,	Stamford.
Darby, Charles Sinclair, Jr.,	Univ. N. Y., '90,	Stamford.
Darling, Ashael Ebenezer,	Harvard, '72,	Killingly.
Dart, Frederick Howard.	P. & S., N. Y., '84,	Niantic.
David, Adelard David,	Dartmouth, '89,	Willimantic.
Davis, Charles Henry Stanley,	Univ. N. Y., '66,	Meriden.
Davis, Edwin Taylor,	Univ. Vt., '88,	Ellington.
Davis, Elias Wyman, B.A., Yale, '80.	Yale, '92,	Seymour.
Davis, Emory Hawkins,	Univ. Vt., '72,	Moosup.
Davis, Gustav Pierpont, B.A., '66,	P. & S., N. Y., '69,	Hartford.
Davis, Warren Russell,	Univ. Vt., '82,	Voluntown.
Davison, Luther Augustus,	Univ. N. Y., '82,	Hartford.
Day, Fessenden Lorenzo, B.A.,	Bellevue, '93,	Bridgeport.
Day, Loren True,	Yale, '80,	Westport.
Dean, Horace Camillus,	Univ. N. Y., '85,	New Britain.
Deane, Henry Augustus,	Dartmouth, '68,	South Windsor.
Defendorf, Allen Ross, B.A., Yale, '94,	Yale, '96,	Middletown.
DeForest, Louis Shepard, B.A., '79; M.A., '91,	Univ. Jena, '85,	New Haven.
Delaney, William Joseph,	McGill Univ., '87,	Naugatuck.
Delesdernier, Horace William,	Univ. Vt., '85,	Meriden.
Dennis, Frederic Shepard, B.A., Yale, '72, M.R.C.S.,	Bellevue, '74,	Norfolk.
DeWolfe, Daniel Charles,	Univ. Vt., '86,	Bridgeport.
Dickerman, Wilton Elias, B. A., Amherst, '90,	Yale, '93,	Hartford.
Donahue, James Joseph,	P. & S., Balt. '96,	Norwich.
Donaldson, William Henry,	Univ. N. Y., '81,	Fairfield
Dooley, John Thomas,	Univ. N. Y., '87,	Manchester.
Douglass, Edmund Peaslee,	Univ. N. Y., '89,	Groton.
Douglass, Elmer Ellsworth,	P. S., Min'a'ls, '94, Barnes Medical,'95.	Hartford.
Dowling, John Francis,	L. I. Hosp. Coll., '90,	Hartford.
Down, Edwin Augustus,	P. & S., N. Y., '87,	Hartford.
Downey, Roger Charles,	Univ. Vt., '92,	Middletown.
Downs, Frederick Bradley,	Univ. N. Y., '78,	Bridgeport.
Drake, Norman Lucie,	Univ. N. Y., '91,	Lebanon.
Dumortier, Jean,	Univ. Ghent. Belg. '89,	So. Norwalk.
Dunham, Martin Van Buren,	Harvard, '67,	G'field Hill.
Edgerton, Francis Daniels, A.M., '61,	Univ. Vt., '61, P. & S., N. Y., '64,	Middletown.
Edwards, Philip Henry,	Univ. N. Y., '95,	So. Coventry.
Eggleston, Jeremiah Dewey,	P. & S., N. Y., '79,	Meriden.
Eliot, Gustavus, B.A., '77; A.M., '82,	P. & S., N. Y., '80,	New Haven.
Ellis, Thomas Long, B. A., Yale, '94,	Yale, '96,	Bridgeport.

Name.	Medical Graduation.	P. O. Address.
Elmer, Oliver Edward,	P. & S., Balt., '94,	Hartford.
Ely, John Slade. Ph.B., Yale, '81, M.A., Columbia, '97,	P. & S., N. Y.,'86.	New Haven.
Ensign, Robert Eleazer,	Albany, '57,	Berlin.
Evans, Alexander William, Ph.B., '90,	Yale, '92,	New Haven.
Ewing, Andrew Melville, C.M., Trin. Univ., '86,	M. R. C. S., '88,	Bridgeport.
Felty, John Wellington,	Jefferson, '84.	Hartford.
Fenn, Ava Hamlin,	P. & S., Balt., '86,	Meriden.
Ferguson, George Dean,	Univ. N. Y., '79,	Thomaston.
Ferrin, Carlisle Franklin, B.A., Univ. Vt., '91,	P. & S.. N. Y., '95,	New London.
Ferris, Harry Burr, B.A., '87,	Yale, '90,	New Haven.
Field, Albert,	L. I. Coll.Hosp., '67,	E. Hampton.
Finch, George Terwilliger, B.A., M.A., '78,	Hobart, '75, Bellevue, '77,	Thomp'nville.
Fisher, William Edwin,	Univ. Pa., '76,	Middletown.
Fiske, Isaac Parsons,	Univ. N. Y., '75,	Waterbury.
Fitzgerald, Edward,	P. & S., Balt., '84,	Bridgeport.
Fleck, Harry Willard,	Univ. Pa., '96,	Bridgeport.
Fleischner, Henry,	Yale, '78,	New Haven.
Flint, Eli Percival,	Yale, '79,	Rockville.
Flynn, James Henry Joseph,	Yale, '95,	New Haven.
Foote, Charles Jenkins, B.A., '83,	Harvard, '87,	New Haven.
Ford, George Skiff,	Bellevue, '93,	Bridgeport.
Ford, William J.,	Univ. N. Y., '84,	Washington.
Foster, John Pierpont Codrington, B.A., '69,	Yale, '75,	New Haven.
Fox, Charles James,	Univ. N. Y., '76,	Willimantic.
Fox, Edward Gager,	Univ. N. Y., '83,	Wethersfield.
Fox, Morton Earl,	L. I. Hosp. Coll., '93,	Montrose.
French, Eugene Cowles,	Univ. Mich., '82,	Watertown.
French, Howard Truman,	P. & S., N. Y., '91,	Deep River.
Freney, John Daniel,	L. I. Coll.Hosp., '93,	Waterbury.
Froelich, Charles Edward, M.A., Univ. Copenhagen, '64,	Copenhagen, '70,	Hartford.
Frost, Charles Warren Selah,	P. & S., N. Y., '80,	Waterbury.
Fuller, Horace Smith, Amherst, B.A., '58; A.M., '61,	P. & S., N. Y., '65,	Hartford.
Galvin, William,	Univ. Vt., '92,	Meriden.
Gardner, James Lester,	Univ. Vt., '81.	Central Village.
Garlick, Samuel Middleton, B.A., Dart., '74,	Harvard, '77,	Bridgeport.
Gartland, John Lawrence,	Univ. N. Y., '91,	Meriden.
Gay, George Clifton,	Univ. Mich., '90,	Waterbury.
Gaylord, Chas. Woodward, B.A., '70,	Yale, '72,	Branford.
Gilbert, Samuel Dutton, B.A., '69,	Yale, '71,	New Haven.
Gildersleeve, Charles Childs,	Yale, '96,	E. Woodstock.
Gill, Michael Henry,	Yale, '96,	Hartford.
Gillin, Charles Adelbert,	Univ. N. Y., '83,	Berlin.
Gilnack, Frederick,	P. & S., N. Y., '67.	Rockville.
Gladwin, Ellen Hammond,	W. Med., N. Y., '72,	Hartford.
Godfrey, Charles Cartlidge,	Dartmouth, '83, Yale, '88,	Bridgeport.
Gold, James Douglass, Ph.B.,	P. & S., '91,	Bridgeport.
Gompertz, Louis Michael,	Yale, '96,	New Haven.

Name.	Medical Graduation.	P. O. Address.
Goodenough, Edward Winchester, B.A., Yale, '87,	Yale, '93,	Waterbury.
Goodrich, Alfred Russell,	Berkshire, '46,	Vernon.
Goodwin, Ralph Schuyler,	P. & S., N. Y., '66,	Thomaston.
Goodwin, Ralph Schuyler, Jr., Ph. B., Yale, '90,	P. & S., N. Y., '93,	New Haven.
Goodyear, Robert Beardsley,	Yale, '68,	North Haven.
Gordon, James William,	Bellevue, '88,	Sandy Hook.
Gordon, William Francis,	L. I. Hosp. Coll., '96.	Danbury.
Gorham, Andrew Bennett,	Yale, '79,	Wilton.
Gorham, Frank,	Yale, '76,	Lyon's Plain.
Grannis, John Henry,	Yale, '68,	Old Saybrook.
Graves, Charles Burr, B.A., '82,	Harvard, '86,	New London.
Graves, Frederick Chauncey,	Univ. N. Y., '88,	Bridgeport.
Graves, Frederick George,	Yale, '92,	Waterbury.
Gray, William Henry,	P. & S., N. Y., '89,	Old Mystic.
Gray, William Wetmore, B.S., Dickinson, '85,	Bellevue, '90,	Bridgeport.
Gregory, James Glynn, B.A., '65,	P. & S., N. Y., '68,	Norwalk.
Griggs, Edward Luther,	L. I. Hosp. Coll., '64,	Waterbury.
Griswold, Edward Hammond,	Univ. N. Y., '78,	E. Hartford.
Griswold, Frederick Pratt,	P. & S., N. Y., '76,	Meriden.
Griswold, Hamilton Byron,	Univ. Vt., '86,	Gayl'dsville.
Griswold, James Brown,	Dartmouth, '92.	New London.
Griswold, Julius E.,	Univ. N. Y., '78,	Portland.
Griswold, Rufus White,	P. & S., N. Y., '54,	Rocky Hill.
Guild, Frank Eugene,	L. I. Hosp. Coll., '85,	Windham.
Goldstein, Frederick Carl,	Yale, '93,	Ansonia.
Hadley-Judd, Etta May,	Women's Med. Coll. Phila., '95.	Litchfield.
Hall, Edward Dormenio,	Harvard, '73,	Meriden.
Hall, Joseph Barnard,	Yale, '92,	Hartford.
Hallock, Frank Kirkwood, A.B., A.M., '82,	P. & S., N. Y., '85,	Cromwell.
Hamant, Irving Lewis,	L. I. Hosp. Coll., '90,	Norfolk.
Hamilton, Charles Allen,	Univ. Vt., '86,	Waterbury.
Hammond, Henry Louis, Ph.B., '64,	Harvard, '66,	Killingly.
Hanchett, Thatcher Swift,	Bellevue, '64,	Torrington.
Hanrahan, Daniel Aloysius,	Bellevue, '95,	Stamford.
Harriman, Patrick Henry,	Univ. N. Y., '84,	Norwich.
Harris, George Robert,	P. & S., N. Y., '85,	Norwich.
Hart, Charles Remington,	P. & S., N. Y., '59,	Bethel.
Haskell, Charles Nahum,	Univ. Vt., '90,	Bridgeport.
Haven, William Chadbourne,	Univ. N. Y., '77,	Coventry.
Hawkes, Wm. Whitney, B.A., '79,	Yale, '81,	New Haven.
Hawley, George Rufus,	L. I. Hosp. Coll., '92,	Danbury.
Hayes, James Dermot, B.S., Man. Coll., N. Y.,	Univ. N. Y., '94,	Torrington.
Hayes, John Francis,	Univ. N. Y., '79,	Waterbury.
Hazen, Miner Comstock,	Univ. Mich., '55,	Haddam.
Heady, Elias Buel,	Yale, 72,	Milford.
Hetzel, Joseph Linn,	Bellevue, '91,	Southport.
Hewes, Frank William,	Univ. Vt., '94,	Groton.
Heyer, Harold Hankinson,	Univ. N. Y., '87,	New London.
Hexamer, Carl Reisig, B.S., '83,	P. & S., N. Y., '86,	Stamford.
Higgins, Harry Eugene,	Univ. N. Y., '96.	Norwich.
Higgins, Royal Lacey,	Bellevue, '67,	Norwalk.
Higgins, William Lincoln,	Univ. N. Y., '90,	So. Coventry.
Hill, Charles Edwin, B.A., '76,	Harvard, '79,	E. Killingly.

Name.	Medical Graduation.	P. O. Address.
Hill, Seth,	Yale, '66,	Stepney.
Hills, Laura Heath,	W. Med. Coll., Pa.,	Willimantic.
Hills, Thomas Morton,	Yale, '63,	Willimantic.
Hinckley, Donald Rose, B. A., Yale, '92,	Harvard, '96,	New Haven.
Holbrook, Charles Werden, M.A., Amherst, '93,	Yale, '96,	East Haven.
Holbrook, George,	Univ., Vt., '94,	Waterbury.
Holbrook, Lowell,	Univ. N. Y., '49,	Thompson.
Holmes, Arthur Almond,	Harvard, '65,	Bridgeport.
Holmes, George James,	Albany, '82,	New Britain.
Holmes, Walter Hamilton, A.B., '75,	Harvard, '79,	Waterbury.
Holroyd, Joseph Scripture,	P. & S., N. Y., '95,	Waterville.
Horton, William Wickham,	Univ. N. Y., '79,	Bristol.
Hotchkiss, Norton R.,	Univ. Md., '91,	New Haven.
Houghton, Simon Willard	Bellevue, '79,	Hazardville.
House, Albert Louis,	Yale, '95,	Torrington.
Howard, Arthur Wayland,	Univ. N. Y., '90,	Wethersfield.
Howard, John,	Dartmouth, '81,	Hartford.
Howd, Salmon Jennings,	Jefferson, '83,	Winsted.
Howe, Harmon George,	Univ. Vt., '73, P. & S., N. Y., '75,	Hartford.
Howe, Herbert H.,	Univ. Vt., '80,	Yantic.
Hoyt, Curtis Clark,	P. & S., N. Y., '87,	Bridgeport.
Hubbard, Charles Henry,	Yale, '60,	Essex.
Hubbard, Stephen Grosvenor, M.A., '60,	Dartmouth, '43,	New Haven.
Hudson, William Miller, B.A., Yale, '53,	Jefferson, '55,	Hartford.
Hughes, Oliver John Davis, Ph.D., Univ. Heidelburg, '71, M. S., London,	L. I. Hosp. Coll., '75,	Meriden.
Huntington, Samuel Henry,	Yale, '76,	Norwalk.
Hurd, Alonzo L., B.S., Me., '82,	Univ. Vt., '91,	Somers.
Hulbert, William Sharon,	Univ. N. Y., '89,	Winsted.
Hurlbut, Augustin Moen, B.A.,'76,	P. & S., N. Y., '79,	Stamford.
Ingalls, Phineas Henry, A.B., '77; A.M., Bowdoin, '85,	P. & S., N. Y., '80,	Hartford.
Irving, Samuel Wellington,	Yale, '91,	New Britain.
Isham, Oliver Kingsley,	Univ. N. Y., '88,	Hartford.
Ives, Robert Shoemaker, B.A., '64; M.A.,	Yale, '66,	New Haven.
Jarvis, George Cyprian,	Univ. N. Y., '60,	Hartford.
Jennings, George Herman,	L. I. Hosp. Coll., '75,	Jewett City.
Johnson, Edwin Hines,	Univ. Vt., '88,	Naugatuck.
Johnson, Frederick Eugene,	Univ. N. Y., '69,	Mansfield.
Johnson, John Murray,	L. I. Hosp. Col. '95,	Bridgeport.
Johnson, John William,	P. & S., Balt., '93,	Torrington.
Johnson, Marcus Morton, Ph.B., Brown, '70,	Univ. N. Y., '77,	Hartford.
Jones, Daniel Albion, B.A., Yale, '84; D.M.D., Harvard, '89,	Yale, '92,	New Haven.
Judson, Walter, B.A.,'64; M.A.,'97.	P. & S., N. Y., '70,	New Haven.
Judson, William Henry,	Jefferson, '78,	Dan'lsonville.
Kane, Thomas Francis,	Bellevue, '87,	Hartford.
Kellog, Clifford Walcott,	Yale, '96,	New Haven.
Kendall, John Calvin, B.A., '70,	P. & S., N. Y., '75,	Norfolk.
Keniston, James Mortimer,	Harvard, '71,	Middletown.

Name.	Medical Graduation.	P. O. Address.
Kenna, William Matthew, Ph.B., Yale, '90,	Yale, '92,	New Haven.
Kennedy, John Timothy,	Univ. N. Y., '94,	So. Norwalk.
Kent, John Bryden,	Harvard, '69,	Putnam.
Kilbourn, Joseph Austin,	P. & S., Balt., '97,	Hartford.
Kilmartin, Thomas Joseph,	Univ. N. Y., '95.	New Haven.
Kimball, Rush Wilmot, A.B., '87, Williams,	L. I. Hosp. Coll., '90,	Norwich.
Kingsbury, William Sanford,	Yale, '96.	Glastonbury.
Kirby, Frank Alonzo,	Columb. Univ., Wash., D. C., '95,	New Haven.
Klenke, Henry Frederick,	Univ. N. Y., '92,	New Haven.
Knight, Charles Milo,	Louisville, '93,	Chaplin.
Knight, George Henry,	P. & S., N. Y., '86,	Lakeville.
Knight, William Ward,	Univ. N. Y., '76,	Hartford.
Korn, William Alfred,	Yale, '92,	Colchester.
Lamb, Chauncey Stafford,	Buffalo, '93,	New Haven.
Lambert, Benjamin Lott,	Univ. N. Y., '83,	New Haven.
LaPierre, Julian,	Bellevue, '71,	Norwich.
LaPointe, John William Henry,	Lavalle Univ., Montreal, '92,	Meriden.
LaRue, Omer,	Vict., Montreal, '71,	Putnam.
Lauder, Robert, M.A.,	Yale, '71,	Bridgeport.
Law, Homer Lycurgus,	Jefferson, '69,	Hartford.
Lawlor, Timothy Chris. Ambrose,	Bellevue, '92,	Rockville.
Lawrence, George Washington,	Yale, '90,	East Berlin.
Lawson, George Newton, B.A., '90,	Yale, '92,	M. Haddam.
Lawton, Franklin Lyman, Ph.B., Yale, '90,	Yale, '93,	Hartford.
LeClair, Charles Joseph,	Victoria, '87,	Dan'lsonville.
Lee, Frank Herbert,	Albany, '88,	Canaan.
Lemmer, George Edward,	Bellevue, '85,	Danbury.
Leonard, Elbridge Knowlton,	Conn. Med., S'y., '66,	Rockville.
Leverty, Robert Gordon,	Univ. N. Y., '95,	Bridgeport.
Lewis, George Francis, B.A., '64,	Yale, '65,	Collinsville.
Lewis, George Frederick, B.A., '77,	Yale, '84,	Stratford.
Lewis, John Benjamin,	Univ. N. Y., '53,	Hartford.
Lindsley, Charles Augustus, B.A., '49; M.A.,	Yale, '52,	New Haven.
Lindsley, Chas. Purdy, Ph. B., '75	Yale, '78,	New Haven.
Lockhart, Reuben Arthur,	Yale, '91,	Bridgeport.
Loeb, Maximilian Lawrence,	Yale, '97,	New Haven.
Look, Frank Byron,	Bowdoin, '84,	Hartford.
Loomis, Francis Newton, B.A., '81,	Yale, '83,	Derby.
Loveland, Ernest Kilburn,	Yale, '97,	Watertown.
Loveland, John E., A.B., '89,	Harvard, '92,	Middletown.
Lowe, Henry Russell,	Dartmouth, '82,	Woodst'k Vall'y
Lowe, Russell Walter,	Univ. N. Y., '89,	Ridgefield.
Luby, John Francis, Ph. B., '76,	P. & S., N. Y., '78,	New Haven.
Lynch, John Charles,	Univ. N. Y., '86,	Bridgeport.
Lyon, Edwin Bradbury,	Berkshire, '62,	New Britain.
Lyons, Andrew Wolff,	Columbus, '76,	Bridgeport.
MacLaren, William Stevenson,	P. & S., N. Y., '89,	Litchfield.
Maher, Stephen John,	Yale, '87,	New Haven.
Mailhouse, Max, Ph.B., '76,	Yale, '78.	New Haven.
Maitland, Lewis,	Univ. Pa., '95,	Middletown.
Maloney, Daniel Joseph,	Univ. N. Y., '96,	Waterbury.
Mansfield, Howard Parker,	L. I. Hosp. Coll., '93,	Georgetown.
Marcy, Robert Adrian,	Univ. N. Y., '82,	New Preston.
Marsh, Arthur Washburn,	Univ. Vt., '82,	Westville.

Name.	Medical Graduation.	P. O. Address.
Martin, Thomas Francis,	Univ. N. Y., '74,	Bridgeport.
Mason, Jarvis King, Yale, B.A., '55; M.A., '59,	Harvard, '61,	Suffield.
Mathewson, Earl,	P. & S., N. Y., '79,	Durham.
May, George William,	Milwaukee, '95,	Willimantic.
Mayberry, Franklin Hayden,	Univ. Vt., '85,	Burnside.
Mayer, Nathan,	Cincinnati, '57,	Hartford.
McCabe, Edward Michael, B.A., '84,	Yale, '87,	New Haven.
McCook, John Butler,	P. & S., N. Y., '94,	Hartford.
McDonald, Edward Walsh,	Univ. N. Y., '71,	Waterbury.
McDonnell, Ralph Augustine, B.A., '90,	Yale, '92,	New Haven.
McFarland, David Walter,	Univ., N. Y., '85,	Stamford.
McGaughey, James David,	Jefferson, '70,	Wallingford.
McIntosh, Edward Francis,	Yale, '97,	New Haven.
McIntosh, James Fabien,	Victoria, '87,	N.G'sv'n'rd'le.
McKnight, Everett James, B.A., Yale, '76,	P. & S., N. Y., '79,	Hartford.
McNeil, Archibald,	Dartmouth, '96,	New Haven.
McNeil, Rollin,	Yale, '62,	New Haven.
Mead, Kate Campbell,	Wom. Med. Coll., Phila., '88,	Middletown.
Meek, James Albert,	McGill Univ., '75,	Stamford.
Meeks, Harold Albert,	Bellevue, '90,	Meriden.
Metz, Peter Frederick,	Univ. N. Y., '93,	New Haven.
Miles, Harry Shillingford, Ph.G., N. Y., '88,	P. & S., N. Y., '91,	Bridgeport.
Miller, George Root,	P. & S., Balt., '88,	Hartford.
Minor, George Maynard,	L. I. Hosp. Coll., '85,	Waterford.
Mitchell, James Thomas,	Univ. N. Y., '91,	Colchester.
Monahan, Joseph Bernard,	Dartmouth, '94,	New Haven.
Moody, Mary Blair,	Buffalo, '76,	New Haven.
Moody, Robert Orton, B.S., Cornell, '91,	Yale, '94,	New Haven.
Moore, Howard Doolittle,	Bellevue, '87,	Riverton.
Moore, James Albert, B.A., Yale, '92,	Yale, '94,	New Haven.
Morgan, William Dennison, A.B., Trinity, '72,	P. & S., N. Y., '76,	Hartford.
Moriarty, James Ligouri,	Harvard, '96,	Waterbury.
Morrell, Frederick Augustus, B.A., Oberlin, '91; M.A.,	L. I. Hosp. Coll., '85,	Putnam.
Moulton, Edward Seymour, B.A., Oberlin, '91; M.A.,	Yale, '94,	New Haven.
Mulville, Frederick Louis,	Bellevue, '96,	Stamford.
Munger, Carl Eugene, Ph.B., '80,	P. & S., N. Y., '83,	Waterbury.
Munger, Walter Seward,	Yale, '55,	Watertown.
Munson, Leonard Walter,	Georget'n Univ., '96,	Stamford.
Murphy, James,	Univ. Pa., '95,	Portland.
Murphy, Michael Daniel,	Bellevue, '84,	Middletown.
Murphy, Walter Graham,	Alb'y Med.Coll., '90,	E. Hartford.
Nadler, Alfred Goldstein, B.A., Yale, '93,	Yale, '96,	New Haven.
Naylor, James Henry,	Univ. Vt., '95,	Hartford.
Nelson, Abiel Ward,	Harvard, '61,	New London.
Newton, Cyrus Brownlie,	Yale, '56,	Stafford S'gs.
Newton, Matthew Turner,	Yale, '51,	Suffield.
Nichols, Edward Payson, A.B., '48; A.M., '51,	P. & S., N. Y., '52,	Killingworth.
Nickerson, Nehemiah,	N.Y. Med. Coll., '57,	Meriden.

Name.	Medical Graduation.	P. O. Address.
Nicoll, John,	Yale, '54,	New Haven.
Noble, Henry Smith, A.B., '59,	P. & S., N. Y., '71,	Middletown.
Nolan, Daniel Andrew, Ph.G., '94,	Med.Chir. Col., Pa.,	Middletown.
Nolan, Jacob Matthew,	P. & S., Balt., '94,	Westport.
North, James Howard,	L. I. Hosp. Coll., '73,	Goshen.
North, John Leopold,	Louisville, '94,	Avon.
Noxon, George Henry,	Balt. Med. Coll., '93,	Darien.
Ober, George Eugene,	Univ. Vt., '90,	Bridgeport.
O'Connell, Thomas James,	P. & S., Balt., '92,	E. Hartford.
O'Connor, Matthew Charles, A.B., '69,	P. & S., N. Y., '73,	New Haven.
O'Connor, Patrick Thomas,	Bellevue, '92,	Waterbury.
Oertel, Horst Richard,	Yale, '94,	New Haven.
O'Flaherty, John,	Albany, '64,	Hartford.
O'Hara, Bernard Augustine,	Bellevue, '82,	Waterbury.
O'Hara, William James Aloysius,	P. & S., Balt., '93,	Bridgeport.
O'Laughlin, Thomas Francis,	Univ., N. Y., '96,	Rockville.
Osborn, George Wakeman, B.A., '84,	P. & S., N. Y., '87,	Bridgeport.
Osborne, Oliver Thomas,	Yale, '84,	New Haven.
O'Sullivan, Thomas Jefferson,	Bellevue, '76,	Birmingham.
Overlock, Selden Barden,	Bellevue, '89,	Pomfret.
Paddock, Lewis Sloat, M.A.,	N.Y. Med. Coll., '54	Norwich.
Page, Charles Ithamar,	P. & S., N. Y., '90,	Litchfield.
Page, Charles Whitney,	Harvard, '70,	Middletown.
Paige, Harris Lee,	Jefferson, '96,	New Britain.
Park, Charles Edwin,	Yale, '81,	New Haven.
Parker, Julian Newell,	Yale, '67,	S. M'chester.
Parker, Theodore Raymond,	Univ. N. Y., '80,	Willimantic.
Parmele, George Luther, D.M.D.,	L. I. Hosp. Coll., '69,	Hartford.
Parsons, Edward Field, A.B., Williams, '48,	P. & S., N. Y., '58,	Thomp'ville.
Peck, Anthony, B.A., '72,	Univ. N. Y., '75,	Norwich.
Peck, George Augustus,	P. & S., N Y., '91,	Meriden.
Peck, Robert Ellsworth, Ph.B., Yale, '90,	Yale, '93,	New Haven.
Peckham, Lucy Creemer,	Wom.Med., Pa.,'85,	New Haven.
Perkins, Charles Harris,	P. & S., N. Y., '91,	Norwich.
Perkins, William Sheldon Clark,	P. & S., N. Y., '60,	Norwich.
Phelps, Charles Dickinson,	P. & S., N. Y., '95,	New Haven.
Philip, Rosavelle Gardner,	Wom. Med. Coll., N. Y. Inf., '75,	Stamford.
Phillips, Alfred Noroton,	P. & S., N. Y., '83,	Stamford.
Pierce, Elbridge Worthington,	Univ. N. Y., '85,	Meriden.
Pierson, Samuel,	P. & S., N. Y., '81,	Stamford.
Pike, Ezra Barker,	Bowdoin, '57,	Abington.
Pinney, Royal Watson,	P. & S., N. Y., '88,	Derby.
Pirritte, Frederick Winchelle,	Univ. Toronto, '93,	New Haven.
Pitman, Edwin Parker, B.A., '86,	Dartmouth, '91,	New Haven.
Platt, William Logan,	P. & S., N. Y., '81,	Torrington.
Plumstead, Matthew Woodbury,	Jefferson, '87,	E. Haddam.
Poore, John Robinson,	Harvard, '94,	Waterbury.
Porter, George Loring, B.A., '59,	Jefferson, '62,	Bridgeport.
Porter, Isaac Napoleon, B.A., Lincoln Univ., '90,	Yale, '93,	New Haven.
Porter, William Jr.,	Chic.Med. Coll.,'81,	Hartford.
Potter, Frank Edward,	P. & S., N. Y., '89,	Portland.
Powers, Frederick,	P. & S., N. Y., '70,	Westport.
Pratt, Edward Loomis,	Univ. N. Y., '84,	Winsted.

Name.	Medical Graduation.	P. O. Address.
Pratt, Elias,	P. & S., N. Y., '87,	Torrington.
Purdy, Alexander Marshall,	Univ. Vt., '84,	Mystic.
Rainville, Frederick Edmund,	Univ. Vt., '91,	Wauregan.
Randall, William Sherman, Ph.B.,	Yale, '83,	Shelton.
Rankin, Charles Goodrich, A.M., '87, Williams, A.B., '84,	Chic.Med. Coll., '86,	Glastonbury.
Reardon, Thomas Francis,	Univ. Vt., '94,	Thompsonville.
Reilly, James Michael,	Yale, '78,	New Haven.
Reynolds, Herbert Sumner,	Univ. N. Y., '81,	Clinton.
Rice, Watson Emmons,	Univ. Mich., '72,	Stamford.
Richards, William Spencer,	Univ. N. Y., '89,	W. Winsted.
Richards, Dwight Alphonso,	Yale, '81,	Shelton.
Ring, Henry Wilson, A.B., '79; M.A.,	Me. Med. Coll., '81,	New Haven.
Rising, Harry Breed,	Yale, '95,	S.Glastonbury.
Rising, Henry Martin,	Yale, '68,	S.Glastonb'ry.
Robbins, Charles Henry,	Med. Coll., Balt., '95,	New Haven.
Robbins, George Orrin,	Yale, '79,	Waterbury.
Robbins, James Watson,	Bellevue, '80,	Naugatuck.
Roberts, Edward Kilbourne, Ph.B., '78,	Yale, '80,	New Haven.
Robinson, Myron Potter,	Yale, '95,	Terryville.
Robinson, Myron Winslow,	Berkshire, '60,	Colchester.
Robinson, Paul Skiff, Ph.B., Yale, '89,	Yale, '91,	New Haven.
Robinson, Rienzi,	L. I. Hosp. Coll., '69,	Danielson.
Rockwell, Thomas Francis,	Univ. N. Y., '81,	Rockville.
Rodger, David Robert, A.B., Hamilton, '82,	P. & S., N. Y., '88,	Woodbury.
Rodman, Charles Shepard,	P. & S., N. Y., '68,	Waterbury.
Rogers, Francis Joseph,	Univ. Pa., '73,	Stamford.
Rogers, Frederick,	Univ. N. Y., '63,	Willimantic.
Rogers, Thomas Weaver,	P. & S., N. Y., '90,	New London.
Root, Edward King,	Univ. N. Y., '79,	Hartford.
Root, Joseph Edward, B.S., '76, S.B., Boston Univ.,	P. & S., N. Y., '83,	Hartford.
Rose, John Henry,	Univ. N. Y., '92,	Hartford.
Rowe, Michael Matthew,	P. & S., Balt., '96.	Bridgeport.
Ruickoldt, Arthur,	Univ. Jena, '65,	New Haven.
Ruland, Fred Davis,	P. & S., N. Y., '89,	Westport.
Russell, George Washington,	Bellevue, '96,	Waterbury.
Russell, Gurdon Wadsworth, Trinity, B.A., '34; M.A., '37,	Yale, '37,	Hartford.
Russell, Thomas Hubbard, Ph.B., Yale, '72,	Yale, '75,	New Haven.
Russell, William Spencer,	Yale, '80,	Wallingford.
Russell, Willis Adams,	Univ. N. Y., '81,	Essex.
Sanford, George Willis,	Berkshire, '36,	Simsbury.
Sanford, Leonard Luther, B.A., Yale, '90,	Yale, '93,	New Haven.
Sanford, Ward Harding,	Balt. Med. Coll.,'95,	New Haven.
Sawtelle, Frederick George,	L. I. Hosp. Coll., '80,	Pomfret.
Schavoir, Frederic,	P. & S., Balt., '87,	Stamford.
Scoville, Clarence Henry,	Balt.Med.Col.,'92.	New Canaan.
Sears, Cushman Allen,	Univ. N. Y., '62,	Portland.
Seaver, Jay Webber, B.A., '80,	Yale, '85,	New Haven.
Sedgwick, James Theodore,	Univ. N. Y., '85.	Litchfield.
Segur, Gideon Cross,	P. & S., N. Y., '82,	Hartford.

Name.	Medical Graduation.	P. O. Address.
Seibold, John Jacob,	St. Louis Med. Coll., '91,	New Haven.
Selleck, Nathaniel,	Univ. N. Y., '89,	Danbury.
Sellew, Phillip Hamilton,	Jefferson, '90,	Salisbury.
Sharpe, Elmer Thomas,	Univ. N. Y., '95,	Derby.
Sheahan, Michael Joseph	Yale, '96,	New Haven.
Sheedy, Bryan DeForest,	Univ. N. Y., '84,	Bridgeport.
Sheehan, William Joseph, B.S., Manhattan Col., '92,	Yale, '95,	New Haven.
Shelton, Gould Abijah, M.A., '91,	Yale, '69,	Shelton.
Shepard, Durell,	Yale, '64,	West Haven.
Shepard, George Reubens,	Yale, '66,	Hartford.
Sherer, Henry Clifford,	Univ. N. Y., '92,	So. Norwalk.
Sherman, Henry Arthur,	Jefferson, '88,	Putnam.
Sherrill, George,	P. & S., '91,	Stamford.
Simonds, Clarence,	Univ. N. Y., '97,	Damelson.
Simmons, Willard Nelson,	Univ. Vt., '89,	Tolland.
Simpson, Frederick Thomas, B.A., Yale, '79,	Me. Med. Coll., '84,	Hartford.
Skinner, Clarence Edward,	Yale, '91,	New Haven.
Slattery, Morris Dove,	Yale, '93,	New Haven.
Sleeper, George Everest,	Dartmouth, '95.	Hartford.
Smith, Andrew Jackson,	P. & S., N. Y., '63,	Bridgeport.
Smith, Edward Everett,	L. I. Hosp. Coll., '71,	So. Wilton.
Smith, Edward Montrose,	P. & S., N. Y., '82,	Newtown.
Smith, Edward Wier, A.B., Yale, '78,	McGill, Mont., '82,	Meriden.
Smith, Ernest Herman, A.B., Amherst, '85,	P. & S., '89,	Redding.
Smith, Frank Lewis,	Univ. N. Y., '75,	Stamford S'gs.
Smith, Frederick Sumner, B.A., Yale, '79,	Yale, '82,	Chester.
Smith, Herbert Eugene, Ph.B., Yale, '79,	Univ. Pa., '82,	New Haven.
Smith, Henry Hubert,	Jefferson, '77,	Whitneyville.
Smith, Howard Franklin, B.A., Yale, 94,	Yale, '96,	Hartford.
Smith, Junius Foster,	L. I. Hosp. Coll., '90,	Brookfield.
Smith, Marvin,	Univ. N. Y., '83,	New Haven.
Smith, Newton Phineas,	P. & S., N. Y., '82,	Norwich.
Smith, Oliver Cotton,	L. I. Hosp. Coll., '83,	Hartford.
Smyth, Herbert Edward,	McGill. Univ.,'84.	Bridgeport.
Snow, Frank Simeon,	Albany, '89.	Hartford.
Spencer, William David,	P. & S., N. Y., '76.	Saybrook.
Sperry, Frederick Noyes,	Yale, '94,	New Haven.
Sprenger, William,	Univ. Vt., '91,	New Haven.
Spring, Frederick,	Univ. N. Y., '85,	Naugatuck.
Standish, James Herbert,	Univ. N. Y., '95,	Hartford.
Stanley, Charles Everett,	Univ. Pa., '76,	Middletown.
Stanton, George Dallas,	Bellevue, '65,	Stonington.
Stanton, John Gilman, B.A., Amherst, '70,	Wurtzburg, '73,	New London.
Staub, George Edwards,	L. I. Hosp. Coll., '93.	New Milford.
Steadman, Willard George,	Bellevue, '74,	Southington.
Stearns, Henry Putnam, B.A., Yale, '53; M.A., '56,	Yale, '55,	Hartford.
Stern, Charles Seymour,	Bellevue, '91,	Hartford.
Stetson, James Ebenezer,	Yale, '81,	New Haven.
St. John, Samuel Benedict, B.A., Yale, '66,	P. & S., N. Y., '75.	Hartford.

Name.	Medical Graduation.	P. O. Address.
Stone, Jay Stephen,	P. & S., N. Y., '65,	New Britain.
Storrs, Melancthon, B.A., Yale, 52,	Yale, '53,	Hartford.
Stowe, William Harvey,	Yale, '88,	New Haven.
Stratton, Edward Augustus,	Univ. N. Y., '83,	Danbury.
Street, Philo William,	Univ. Vt., '92,	Suffield.
Strickland, Rial,	Albany, '39,	Enfield.
Strosser, Hermann,	Univ. Berlin, '84,	New Britain.
Sullivan, Daniel,	Univ. N. Y., 97.	Stafford Springs
Sullivan, Daniel Francis, A.B., Niagara Univ., '89,	Niagara Univ. '91,	Hartford.
Sullivan, John Francis, B.A., Yale, '90,	P. & S., N. Y., '94,	New Haven.
Sumner, Charles Fletcher,	Univ.W. N. Y., '40,	Bolton.
Swain, Henry Lawrence,	Yale, '84,	New Haven.
Swasey, Erastus Perry,	P. & S., N. Y., '69,	New Britain.
Swett, Josiah,	Univ. Vt., '78,	N. Hartford.
Swett, William Plummer,	Univ. Vt., '76,	Terryville.
Swift, Elisha Dean,	Univ. N. Y., '49,	Hamden.
Taft, Charles Ezra,	Harvard, '86,	Hartford.
Tanner, Alfred Herbert,	Bellevue, '74,	Brooklyn.
Taylor, John Clifton,	Mich. Univ., '91,	New London.
Tenney, Arthur John, Ph.B., Yale, '77,	Yale, '83,	Branford.
Thompson, George,	Me. Med. Coll.,'89, Women's Med Coll.	Taftville.
Thompson, Emma Jane,	N. Y. Inf., '96,	E. Haddam.
Thompson, Harriet Adaline,	Women's Med. Col. Penn., '93,	Bridgeport.
Thomson, Edward Sanford,	P. & S., N. Y., '92,	New Haven.
Thomson, Hiram Benson,	Trin. Un., Tor., '88,	New London.
Tiffany, Frank Monroe, A.B., Amherst, '91,	Univ. Pa., '96,	Stamford.
Tingley, Witter Kinney,	Bellevue, '86,	Norwich.
Tinker, William Richard,	Univ. N. Y., '80,	S. M'chester.
Topping, Jacob Reed,	Univ. N. Y., '82,	Bridgeport.
Townsend, Charles Rodman,	Albany, '95,	Bridgeport.
Townsend, George Hodgson,	Bellevue, '93,	Branford.
Townsend, Jos. Hendley, B.A., Yale, '85,	Yale, '87,	New Haven.
Tracy, Andrew William,	McGill, Mont., '73,	Meriden.
Tracey, William Joseph,	Univ. N. Y., '89,	Norwalk.
Treadway, William A. Buckingham,	Univ. Mich., '83,	Stamford.
Trecartin, David Munson,	Dartmouth, '94,	Bridgeport.
Tudor, Mary Starr,	Women's Med. Col., Phila., '93,	So. Windsor.
Tukey, Frank Martin, B.A., Bowdoin, '91,	Harvard, '94,	Bridgeport.
Turner, Sylvester Wooster, B.A., Yale, '42,	Yale, '46,	Chester.
Tuttle, Albert Lake,	Albany, '88,	Milford.
Tuttle, Charles Alling, Ph.B., Yale, '88,	Yale, '91,	New Haven.
Tuttle, Frank Benjamin,	Yale, '63,	Naugatuck.
Van Vleet, Peter P.,	Bellevue, '69,	Stamford.
Varno, Henry G.,	P. & S., Balt., '82,	Thomp'ville.
Verdi, William Francis,	Yale, '94,	New Haven.
Voorhes, Charles DeWitt,	Univ. N. Y., '89,	Groton.
Wade, John Alexander,	Bellevue, '93,	Danbury.
Wadhaus, Sanford Hosea,	Yale, '96,	Torrington.

Name.	Medical Graduation.	P. O. Address.
Waite, Frank Louis,	Bellevue, '88,	Hartford.
Ward, James Ward,	P. & S., Balt., '95,	Hartford.
Warner, Abner Spicer, A.B., Dartmouth, '42,	Dartmouth, '48,	Wethersfield.
Warner, Charles Stanley,	Jefferson, '96,	Litchfield.
Washburn, Nathaniel P, Ph.B., Yale, '71,	Univ. N. Y., '91,	Stamford.
Waters, John Bradford,	Univ. Vt., '90,	Hartford.
Weed, Willis Edward,	P. & S., N. Y., '83,	Ridgefield.
Weir, Janet Marshall,	Queen's Un. Kingston. Ont., '91,	Hartford.
Watson, Wilbur Seymour,	L. I. Hosp. Coll., '87.	Danbury.
Webb, Daniel Meigs, B.A., Yale, '46,	Yale. '49,	Madison.
Welch, Edward Hubbard,	Yale. '76,	W. Winsted.
Welch, George Kellogg,	P. & S., N. Y., '78,	Hartford.
Welch, William Collins,	Yale. '77,	New Haven.
Weldon, John,	Univ. N. Y., '83,	Willimantic.
Weldon, Thomas Henry,	Univ. N. Y., '83,	S. M'chester.
Wellington, William Winthrop,	Univ. Vt., '89,	Terryville.
Wheeler, Franklin, B.A., Yale, '47; M.A., Yale, '67,	P. &. S., N. Y., '52,	Farmington.
Wheeler, Frank Henry, B.A., Yale, '80,	Yale. '82,	New Haven.
Wheeler, Lewis Hawley,	Yale. '97,	Westport.
White, Benjamin Franklin,	L. I. Hosp. Coll., '86,	Bridgeport.
White, Frederick Olin,	Yale. 73,	New Haven.
White, Moses Clark, B.A., Wesleyan, '45, M.A., Yale,	Yale. '54,	New Haven.
White, Robert Creighton,	Univ. Vt., '89,	Willimantic.
Whiton, Francis Henry,	Dartmouth, '72,	Manchester.
Whittemore, Frank Hamilton,	Bellevue, '74,	New Haven.
Wight, John DeWitt,	Bellevue, '87,	Bethel.
Williams, Carl Alonzo,	Hahneman Med. Coll., Phila., '95,	New London.
Wilson, Frederick Morse, A.B., Colby, '71,	Harvard, '75,	Bridgeport.
Wilson, John Joseph,	P. &. S., Balt., '86,	Bristol.
Wilson, Samuel Allen,	Yale. '52,	Windsor.
Wilson, William Patrick,	P. & S., Balt., '90,	Wallingford.
Wilson, William Virgil,	Yale. '67,	West Haven.
Winchell, Alverd Ezra, A.B., Wesleyan, '57,	P. & S., N. Y., '65,	New Haven.
Winne, William Nelson,	Univ. N. Y., '97.	Westville.
Witter, William,	Yale. '65,	Norwich.
Wolff, Arthur Jacob,	Tex. Med. Col., '76, Bellevue, '83,	Hartford.
Wood, William Francis,	P. & S., Balt., '93,	Meriden.
Wooster, Charles Morris,	Univ. N. Y., '79,	Tariffville.
Wordin, Nathaniel Eugene, B.A., Yale, '70; Yale, M.A., '72,	Jefferson, '73,	Bridgeport.
Wright, Frank Walden,	Bellevue, '80,	New Haven.
Wright, John Winthrop, A.B., Amherst, '77,	Univ. N. Y., '80,	Bridgeport.
Wright, Theodore Goodelle,	Univ. N. Y., '65,	Plainville.
Wurtenberg, William Charles, Ph.B., Yale, '89,	Yale. '93,	New Haven.
Zink, Walter,	Wurtzburg,	Branford.

Members noticing any errors or omissions in any part of their record will please inform the Secretary for correction in future lists.

APPENDIX A.

(See p. 48.)

An International Congress of Professional Medicine and Medical Deontology is to be held at Paris in 1900, on the occasion of the Universal Exposition.

In this Congress, in which even now French medical notabilities and many foreign medical heads of the profession are proposing to take part, medical questions will be studied of a professional order, susceptible of interesting French physicians, physicians of different countries, in one word of fixing the attention of the whole medical corporation.

The Commission of Organization of the Congress, sitting and acting at Paris desirous of surrounding itself as much as possible with the priceless coöperation of all the medical personalities which in France or abroad would be willing to give to the Congress the aid of their moral authority, have the honor of soliciting the kind support of your fame and activity, begging you to make a part of the Committee of Patronage of the Congress.

The Commission of Organization would be grateful to you, Sir and much honored Colleague, if you would give it your answer as soon as possible, in order to allow them to add your name on our general circular to the list of honor constituting in France and in the different countries the Committee of Patronage of the Congress.

In case of a favorable response on your part, the Commission of Organization of the Congress has decided to ask you to be willing to form about you a local commission of propaganda with the aid of the collaboration of some of your colleagues.

This local commission of propaganda would be charged by communication in the medical journals, circulars, etc.,

to induce requests of admission to the Congress on the part of physicians of your country. In connection with this, and to facilitate your aid in that which concerns the propaganda to be made about this Congress the Commission of Organization of the Congress would beg to have the kindness to communicate to it with as brief delay as possible a list of addresses of the physicians of your country to whom might be sent a general circular letter indicating the aim, and demonstrating the utility of the Congress.

In this letter which you receive will be enclosed the program of the questions making the object of the reports, the names of the reporters, French and foreign, the bulletins of adhesion to the Congress as honorary members of participating.

By the same means of propaganda as those indicated above the local comuission of propaganda would be also charged with inciting on the part of the physicians of your country requests for inscription in the order of the day of the assemblies of the Congress, to the end of making communications there. The Commission of Organization of the Congress informs you on this subject that every request for inscription for a communication must be addressed to it, written in form on a questionnaire joined to the bulletin of adhesion accompanying the circular general letter which you will receive.

Be pleased to accept, Sir and much honored Colleague, with the assurance of our devoted sentiments, the expression of our distinguished consideration.

THE PRESIDENT.

The General Secretary,

DR. J. GLOVER.

Address your answer to the General Secretary, Monsieur the Doctor Jules Glover, 37 Faubourg Poissoniére, Paris.

REGULATIONS OF THE INTERNATIONAL CONGRESS OF PROFESSIONAL MEDICINE AND MEDICAL DEONTOLOGY.

ART. 1. Conformably to the ministerial decree, dated June 11, 1898, there is instituted at Paris, during the Universal Exposition of 1900, an International Congress of Professional Medicine and Medical Deontology.

ART. 2. This Congress will open July 23, 1900, at the Palace of the Congress of the Exposition. It will continue at the Faculty of Medicine. Its duration will be eight days.

ART. 3. There will be titular members of the Congress, physicians who shall have sent their adhesion to the Treasurer before the opening of the session, or who shall have themselves inscribed while it is sitting, and who shall have paid the fee, whose amount is fixed at fifteen francs. There will be admitted also as titular members, and on the same conditions (fee of fifteen francs) the judiciary counsel of medical syndicates and medical societies.

The titular members of the Congress shall have the right to take part in the discussions.

Besides the titular members there shall be a part of the Congress with the title of participating members, the wives of the Congressists and students of medicine.

These participating members shall pay a fee of ten francs.

The members of the Congress alone have the right to assist at the sittings, which are not public. The members of the Press will receive a personal card of entrance on request.

ART. 4. The members of the Congress will receive a card (card of titular member or card of participant mem-

ber) which will be delivered to them by the care of the Commission of Organization.

These cards are strictly personal.

Every card loaned will be immediately withdrawn.

Besides their card the members of the Congress will receive a copy of the Regulations of the Congress. A definite program will be distributed to the Congressists before the opening of the work.

The cards of membership of the Congress give a right to a copy of the reports printed in advance, and which will be distributed before the opening of the work, and a copy of the comptes rendus of the Congress.

ART. 5. The Commission of Organization will proceed to the nomination of the Bureau of the Congress which will have the direction of the work of the session.

ART. 6. The Bureau of the Congress fixes the order of the day for each sitting.

ART. 7. The Congress comprises:

1. General Assemblies;
2. Assemblies of sections;
3. Conferences.

ART. 8. At the opening of the Congress, according to the importance, the abundance, and the probable duration of the work announced, the Bureau of the Congress will reserve to itself the right, with the aim of exhausting the program, of referring a part of this program to the study of sections.

In this case there will be four sections, answering to the four following rubrics in which will be classed the subjects announced:

1. Section I, or Study of the Physician's reports with numbers (the State or numbers other than the State).

2. Section II, or Study of the Physician's reports with individuals (clients, druggists, healers); illegal exercise of medicine.

3. Section III, or Study of the Physician's reports with his colleagues. Medical Deontology.

4. Section IV, or Study of Professional works of discovery, of defense, or of mutual medical assistance.

ART. 9. The work presented at the Congress is of two orders: the reports printed and distributed in advance, and communications. The reports will be printed in French; the communications may be made in French, in German, or in English.

ART. 10. No work can be presented at a session, nor serve as a point of departure for discussion, if the author has not sent in advance to the Commission of Organization the manuscript of the report before the 1st of January, 1900, and the abstract or conclusions of the communication before July 1, 1900. The members of the Congress are begged to observe these dates, in order to leave to the Commission time to print the reports and to examine and classify the communications. If these dates are passed, the insertion of the communication in the definite program will risk not being made in time; the exposition and discussion of the communication cannot take place.

ART. 11. Speakers will not occupy the tribune more than fifteen minutes, nor speak more than twice in the same session on the same subject; at least unless the assembly when consulted decides otherwise.

ART. 12. The members of the Congress who shall have incidentally taken part in a session, must place with the Secretary in the course of the session or immediately after it, an abstract of what they may have said for the editing of the minutes. In case this abstract is not given, the text as written by the Secretary shall hold the place.

ART. 13. The Commission of Organization, after agreement with the Superior Commission of the Congress and

Conference, can ask for reductions from the authors of the abstracts; it can effect these reductions, or decide that the title alone shall be inserted, if the author has not delivered his modified abstract in suitable time.

ART. 14. The Minutes shall be printed and distributed to the members of the Congress as soon as possible after the meeting.

ART. 15. A detailed account of the work of the Congress shall be published by the care of the Commission of Organization. This reserves to itself to fix the extent of the memoirs or communications delivered for printing.

ART. 16. The Bureau of Congress decides as a last resort upon every incident not foreseen in the regulations.

All communications relating to the Congress should be addressed to M. le Dr. Jules Glover, General Secretary of the Commission of Organization, 37 Rue du Faubourg Poissonière, Paris.

APPENDIX B.

CHANGES IN BY-LAWS.

(See Proceedings, pages 22–27.)

For Chapter III, Sec. 5. Proceedings 1898, p. 388, substitute as follows:

CHAPTER III, SEC. 5. The Business Committee shall consist of the President, the Vice President, and the Secretary, ex officio. Besides receiving the dissertations and other papers and reports of cases which in course are referred to them to be read at the meetings of the Society, the Committee shall procure by personal solicitation papers from persons qualified to discuss professional matters of fundamental importance and current interest, and shall seek in every way to furnish an attractive and profitable program of literary exercises for the Annual Convention. The papers

thus secured shall have the place of honor on the program above those referred in course. The Business Committee shall hold office for one year from the first day of July next following the election of its members as officers of this Society, and shall perform all duties that heretofore have devolved upon the Committee on Publication. All provisions of the By-Laws inconsistent herewith are hereby repealed.

The last clause includes, in Chapter II, Sec. 3, the first sentence on top of page 386 and beginning, "The Secretary shall be ex officio." This sentence is accordingly stricken out.

Also the second sentence of Chapter III, Sec. 4, page 388, and beginning, "The Committee of Publication."

In Chapter V, Sec. 3, after the words "nostrum or patent medicine," add the words "or secret treatment."

It is hoped that members of the Society will keep the By-Laws complete by making the changes in the manual furnished them.

APPENDIX C.

Responses to the following toasts were happily made at the Banquet:

The Retiring President—Dr. H. P. Stearns.

The President Elect—Dr. C. S. Rodman.

Institutions of Learning—Prof. F. S. Luther.

The Yale Medical School—Prof. H. E. Smith.

Minister and Doctor—Rev. J. W. Cooper, D.D.

Our Friend, the Press—C. H. Clark.

Law—Judge S. O. Prentice.

The Navy—Admiral Bunce, U. S. N.

Among the letters received was one from an Honorary Member, Sir James A. Grant.

150 Elgin Street, Ottawa,
May 22, 1899.

Dear Sir:—

In consequence of the meeting of The Royal Society of Canada, taking place this year at Ottawa, on the same date as your Society, I regret exceedingly I am unable to join you as I fully intended, on the present occasion. Years are passing on and the opportunity of meeting your members, growing gradually less, and yet I hope to carry out my fond anticipation. I have from time to time noted the marked progress of your scientific work, in all of which I wish you every possible degree of success and with very many thanks for your kind invitations to join your meetings and banquets.

Very sincerely yours,
J. A. Grant.

MEMORANDUM.

At the annual meeting of the Middlesex County Medical Association held in Haddam, April 20, 1899, the following resolutions, passed by the Connecticut Medical Society, and cited on page 34 of the "Proceedings" for 1898, were emphatically endorsed:—

"Resolved, That the Connecticut Medical Society declares it to be derogatory to the dignity of its members to render professional services at a stipulated fee per capita per annum, to members of any lodge, society, association, or organization, or to enter into any contract for such service with any lodge, society, association, or organization; provided, that professional services rendered any hospital, dispensary, orphan asylum, town poor, or other public charity, or salaried services rendered any railroad, shall not be prohibited by this act.

"Resolved, That any member of this Society violating the above resolution is guilty of a breach of professional etiquette and is subject to the rules and regulations governing the same."

It was further unanimously voted, that a copy of these resolutions be sent to each member of the County Association stating that by reason of the action of the State Society it will be incumbent upon the County Society to enforce these resolutions.

The clerk was also authorized to call attention to the fact that the method of practicing medicine by contract is unjust in principle alike to patient and physician. Professional service is too variable in its limits to be measured by the same standard as ordinary labor and any man who renders honest, efficient service with the

consciousness that his patient is getting it "cheap" will certainly not be under influences which will inspire him to do his best. In fact, the result has always been, whenever the experiment has been tried, that the physician so practicing becomes "cheap" not only in the eyes of his brother practitioners but also in the community in which he lives.

There was complete unanimity in the belief that no member would willingly bring discredit upon our County Society, and hence, the purpose of the action taken in endorsing the resolutions of the State Society and voicing the sentiments expressed above was simply to warn any member from unwittingly being victimized by the so-called "lodge contract system" and, if by chance, he had so committed himself, to urge upon him the desirability of terminating the agreement at the earliest possible moment.

Frank K. Hallock, M.D., Clerk.

Cromwell, Conn., April 27, 1899.

YALE UNIVERSITY.

DEPARTMENT OF MEDICINE.

FACULTY.

Rev. Timothy Dwight, D.D., LL.D.. President.

Moses C. White, M.D., *Professor of Pathology.*

Charles A. Lindsley, M.D., *Professor of the Theory and Practice of Medicine, Emeritus.*

William H. Carmalt, M.D., *Professor of the Principles and Practice of Surgery.*

James Campbell, M.D., *Professor of Obstetrics and the Diseases of Women and Children.*

Thomas H. Russell, M.D., *Professor of Clinical Surgery and Surgical Anatomy.*

Herbert E. Smith, M.D., *Professor of Chemistry, and Dean of the Medical School.*

John S. Ely, M.D., *Professor of the Theory and Practice of Medicine.*

Oliver T. Osborne, M.D., *Professor of Materia Medica and Therapeutics.*

Harry B. Ferris, M.D., *Professor of Anatomy.*

Benjamin Moore, M.A., *Professor of Physiology.*

Henry L. Swain, M.D., *Clinical Professor of Diseases of the Throat and Ear.*

Charles J. Bartlett, M D., *Assistant Professor of Pathology.*

OTHER INSTRUCTORS.

Samuel B. St. John, M.D., *Lecturer on Ophthalmology.*

Arthur N. Alling, M.D., *Instructor in Ophthalmology.*

Leonard W. Bacon, Jr., M.D., *Instructor in Operative Surgery.*

Charles D. Phelps, M.D., *Instructor in Physical Diagnosis.*

Ralph A. McDonnell, M.D., *Instructor in Dermatology and Materia Medica.*

Robert E. Peck, M.D., *Instructor in Neurology.*

Warren A. Spalding, *Demonstrator of Pharmacy.*

William H. Parker, B.S., *Instructor on Chemistry.*

Ernst H. Arnold, M.D.. *Instructor in Orthopaedic Surgery.*

Allen R. Defendorf, M D., *Lecturer on Insanity.*

Louis B. Bishop, M.D., *Instructor in Pediatrics.*

Edward M. McCabe, M.D., *Clinical Assistant in Opthalmology.*

Leonard C. Sanford, M.D., *Assistant in the Surgical Clinic.*

Edward S. Moulton, M.D., *Assistant in Gynecology.*

Robert O. Moody, M.D., *Assistant in Pathology.*

Frederick C. Bishop, M.D., *Assistant in the Throat and Ear Clinic.*

Ambrose K. Brennan, M D., *Assistant in Obstetrics.*

Frederick N. Sperry, M.D. *Assistant in the Throat and Ear Clinic.*

William F. Verdi, M.D., *Assistant in the Surgical Clinic.*

Willis H. Crowe, M.D., *Assistant in the Medical Clinic.*

Clifford W. Kellogg, M.D , *Instructor in Histology and Assistant in the Gynecological Clinic.*

Edward F. McIntosh, M.D., *Assistant in the Medical Clinic.*

Samuel F. Hammond, M.D., *Assistant in the Medical Clinic.*

Donald R. Hinckley, M.D., *Assistant in Physical Diagnosis.*

THE CURRICULUM.

The college year extends from the first Thursday of October to the last Wednesday in June, and includes 34 weeks exclusive of vacations. The curriculum is graded through four years, and consists largely of exercises based on assigned lessons in text-books, with much personal instruction in laboratories and clinics.

The Laboratories in all departments are fully equipped for thorough and systematic work by students, and such work is required.

The Clinical Instruction is conducted at the New Haven Dispensary, located on the University grounds, and at the New Haven Hospital, which is near the School. Besides attending the regular clinics which are assigned in the schedule, the students serve as assistants in the Dispensary during the Senior year, and here participate in the daily work of a service amounting to more than 16,000 cases annually.

COLLATERAL INSTRUCTION.

In addition to the regular studies of the curriculum, medical students here have the unusual opportunities of increasing their fund of general information which arise from their residence in a great educational center. As students in the University there are open to them numerous lectures on scientific collections and the use of the University Library of 200,000 volumes.

TERMS OF ADMISSION.

Candidates for admission to the first year of the course leading to the degree of Doctor of Medicine must present satisfactory testimonials of moral character from former instructors or physicians in good standing, and must pass the matriculation examinations. (See Annual Announcement.) But these examinations are not required from candidates who have received degrees in arts or science, nor from those presenting certificates from the proper officer showing that they have successfully prosecuted the subjects of the examinations at same college, high school, academy, or preparatory school, approved by the Faculty as maintaining a satisfactory standard.

HONORS AND PRIZES.

The degree of Doctor of Medicine *magna cum laude* will be conferred on students whose examinations and school work show distinguished merit.

The degree of Doctor of Medicine *cum laude* will be conferred on students whose examinations and shool work show unusual merit.

THE CAMPBELL GOLD MEDAL

is awarded to that member of the graduating class who secures the highest rank in the examinations of the course.

THE KEESE PRIZE.

The income of the fund for the Keese Prize, a memorial of Hobart Keese, M.D., of the class of 1855, which amounts to about $140 annually, is awarded by the Faculty to that member of the graduating class who presents the best thesis.

For particulars of the matriculation and degree examinations, and for information concerning tuition and living expenses, see the Annual Announcement, which will be furnished on application to the Dean,

DR. HERBERT E. SMITH,
Yale Medical School,
New Haven, Conn.